

<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5619	
	gccgagccaa acataccaa	19
<210>	5620	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5620	
	agcatcacca tagtcacctt t	21
<210>	5621	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5621	
	gcatcaccaat agtcaccttt t	21
<210>	5622	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5622	
	cagcaatgaa gccgagccaa	20
<210>	5623	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5623	
	agcaatgaag ccgagccaaa	20
<210>	5624	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5624	
	ttagtccagc aatgaagccg agcc	24

SEQLIST-20480.TXT

<210> 5625
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5625
 ttagtccagc aatgaagccg agcc 24

<210> 5626
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5626
 tccagcaatg aagccgagcc aa 22

<210> 5627
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5627
 ccagcaatga agccgagcca aa 22

<210> 5628
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5628
 gcatcaccat agtcaccttt tt 22

<210> 5629
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5629
 gcccaaaaga ttagacaacc ac 22

<210> 5630
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	5630	
actactctaa cagaaccctc ca		22
<210>	5631	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5631	
gcctgaaatg tcgccaagat caa		23
<210>	5632	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5632	
cacaagtcac caatatggca a		21
<210>	5633	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5633	
tctcctggaa gcgacagcaa		20
<210>	5634	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5634	
actactctaa cagaaccctc ca		22
<210>	5635	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5635	
tgtagaagca gagaaagatg ccaa		24
<210>	5636	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

<220>		
<223>	Primer	
<400>	5636	
	ggcaataata ccaccagcca	20
<210>	5637	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5637	
	tgtagaagca gagaaagatg ccaaa	25
<210>	5638	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5638	
	cgcataca caacagaa	18
<210>	5639	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5639	
	atgcgagcag atgggtaa	18
<210>	5640	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5640	
	cgcataca caacagaaa	19
<210>	5641	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5641	
	cgcataca caacagaaaa	20
<210>	5642	
<211>	22	

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5642
ggaaccatcc ataagcacat aa 22

<210> 5643
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5643
ccctctacat caaagccaat c 21

<210> 5644
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5644
gccagtcttc ctcttcttct tc 22

<210> 5645
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5645
ctatgcgagc agatgggtaa 20

<210> 5646
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5646
gccagtcttc ctcttcttct t 21

<210> 5647
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5647
actactctaa cagaaccctc ca 22

```

SEQLIST-20480.TXT

<210>	5648	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5648	
	agccataacc tttccacatt c	21
<210>	5649	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5649	
	agacacatct aaagcaccca	20
<210>	5650	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5650	
	atgcgagcag atgggtaa	18
<210>	5651	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5651	
	gcagaaaggc taaaaagcac aa	22
<210>	5652	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5652	
	cttttcacat agggcatcaa ca	22
<210>	5653	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5653	
	gcagcaagaa cgcacaataa	20
<210>	5654	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5654	
	aaacaagacc ctcctactgt aa	22
<210>	5655	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5655	
	ttactactct aacagaaccc tcc	23
<210>	5656	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5656	
	gcaccaaata tgcctgctga caa	23
<210>	5657	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5657	
	gcacccttca actttgcct	19
<210>	5658	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5658	
	caccaaatat gcctgctgac aacaa	25
<210>	5659	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

```

<220>
<223>   Primer

<400>   5659
agccataacc tttccacatt c                               21

<210>   5660
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5660
agcatcacca tagtcacctt t                               21

<210>   5661
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5661
agcatcacca tagtcacctt tt                              22

<210>   5662
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5662
gcatcaccat agtcaccttt tt                              22

<210>   5663
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5663
tgcccaaaag attagacaac c                               21

<210>   5664
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5664
gaagcagaga aagatgccaa                               20

<210>   5665

```

```

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5665
ccagaaagca aacaagaccc 20

<210> 5666
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5666
gtgaaagaca tcagcatact cc 22

<210> 5667
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5667
accataatca gggacaacaa cca 23

<210> 5668
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5668
gattcatcgc atcaacacca 20

<210> 5669
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5669
gcaccaaata tgcctgctga caa 23

<210> 5670
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5670

```

accaaatatg cctgctgaca acaa	SEQLIST-20480.TXT	24
<210> 5671		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5671		
cagacacatc taaagcaccc		20
<210> 5672		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5672		
cccagcacca tacctctatt t		21
<210> 5673		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5673		
gcagcaagaa cgcacaataa		20
<210> 5674		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5674		
gccctctaca tcaaagccaa tc		22
<210> 5675		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5675		
agattcatcg catcaacacc		20
<210> 5676		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		


```

<223>    Primer
<400>    5676
aaacaagacc ctcctactgt aa                22
<210>    5677
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5677
gaagcagaga aagatgccaa a                21
<210>    5678
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5678
gaagcagaga aagatgccaa aa                22
<210>    5679
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5679
aagccaatcc acgcacgaac                20
<210>    5680
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5680
acaactacag ccataacctt tc                22
<210>    5681
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5681
agaagcagag aaagatgcca a                21
<210>    5682
<211>    19
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 5682
tcaaagccaa tccacgcac 19
<210> 5683
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5683
agaatcggac accatagtca a 21
<210> 5684
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5684
aagaatcgga caccatagtc a 21
<210> 5685
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5685
caactgtcac ctgtcacttc 20
<210> 5686
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5686
tctacatcaa agccaatcca c 21
<210> 5687
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5687
gaagcagaga aagatgccaa a 21

```

<210>	5688	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5688	
	gaagcagaga aagatgccaa aa	22
<210>	5689	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5689	
	tatagcagcc aacataggca a	21
<210>	5690	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5690	
	tgaagcacca ccaaagga	18
<210>	5691	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5691	
	caacaatgag aaaaagtggc ga	22
<210>	5692	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5692	
	aagccaatcc acgcacgaac	20
<210>	5693	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	5693	
	agcagcctgt gagggaaaa	19
<210>	5694	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5694	
	tgagaaaaag tggcgagtag a	21
<210>	5695	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5695	
	cgcataca caacagaaaa	20
<210>	5696	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5696	
	tccagaaagc aaacaagacc	20
<210>	5697	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5697	
	ccctctacat caaagccaat c	21
<210>	5698	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5698	
	ccagaaagca aacaagaccc	20
<210>	5699	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    5699
aggcagcaca agtcaccaa                                19

<210>    5700
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5700
gcatcaccat agtcaccttt ttc                            23

<210>    5701
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5701
catcgcatca acaccaca                                18

<210>    5702
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5702
cgcatcaaca ccacagaaa                                19

<210>    5703
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5703
aaacaagacc ctcctactgt aa                            22

<210>    5704
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5704
gcaataatac caccagccac                                20

<210>    5705
<211>    18

```

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5705	
	cgcatcaaca ccacagaa	18
<210>	5706	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5706	
	gcatcaacac cacagaaaac	20
<210>	5707	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5707	
	cagcaacaat gagaaaaagt gg	22
<210>	5708	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5708	
	taacaccagc agcctgtga	19
<210>	5709	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5709	
	gcacaaacct acctcccttc	20
<210>	5710	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5710	
	gctatccgca tcaacaact	19

SEQLIST-20480.TXT

<210>	5711	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5711	
	tcaatgggat cagtgccaa	19
<210>	5712	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5712	
	tgaagcacca ccaaagga	18
<210>	5713	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5713	
	ctctacatca aagccaatcc ac	22
<210>	5714	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5714	
	gtagaagcag agaaagatgc caaaa	25
<210>	5715	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5715	
	tcaaagccaa tccacgcac	19
<210>	5716	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5716	
agaagcagag aaagatgccaa aa		22
<210>	5717	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5717	
ccgatggcaa aatgactctt ac		22
<210>	5718	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5718	
aagccaatcc acgcacgaac		20
<210>	5719	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5719	
gtagaagcag agaaagatgc caa		23
<210>	5720	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5720	
cacaagtcac caatatggca a		21
<210>	5721	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5721	
ccagaaagca aacaagaccc		20
<210>	5722	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   5722
ccctctacat caaagccaat c                               21

<210>   5723
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5723
cgcatcaaca ccacagaaaa                               20

<210>   5724
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5724
cgcatcaaca ccacagaaa                               19

<210>   5725
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5725
actatgcgag cagatgggta a                               21

<210>   5726
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5726
cgcatcaaca ccacagaa                               18

<210>   5727
<211>   23
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5727
tgcccaaaag attagacaac cac                               23

<210>   5728

```

```

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5728
ggcacactga taaacaccag a 21

<210> 5729
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5729
aaacaagacc ctcctactgt aa 22

<210> 5730
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5730
tccgatggca aaatgactct tac 23

<210> 5731
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5731
taaagcccca ctgctgaa 18

<210> 5732
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5732
accaccagcc actactgaa 19

<210> 5733
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5733

```

	SEQLIST-20480.TXT	
cgcatcaaca ccacagaaaa c		21
<210> 5734		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5734		
tctacatcaa agccaatcca c		21
<210> 5735		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5735		
gcacccttca actttgcct		19
<210> 5736		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5736		
gcagaaagac acgcaatcat aa		22
<210> 5737		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5737		
gtttacatag cccatctgcc		20
<210> 5738		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5738		
gaagcagaca catctaaagc a		21
<210> 5739		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    5739
gtttacatag cccatctgcc                20
<210>    5740
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5740
gtcacaaacta cagccataac c            21
<210>    5741
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5741
gcagaaagac acgcaatcat aa            22
<210>    5742
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5742
ctctacgaag tcataccaat cc            22
<210>    5743
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5743
gtttacatag cccatctgcc                20
<210>    5744
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5744
tctcctggaa gcgacagcaa                20
<210>    5745
<211>    18
<212>    DNA

```

<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5745	
	taaagcccca ctgctgaa	18
<210>	5746	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5746	
	aatgcctgaa atgtcgcc	18
<210>	5747	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5747	
	ctgtgtaata aaccaagaag tgcc	24
<210>	5748	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5748	
	gctacaccct ttgctaactc	20
<210>	5749	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5749	
	tctacatcaa agccaatcca c	21
<210>	5750	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5750	
	ctgaaatgtc gccaagatca a	21

SEQLIST-20480.TXT

<210>	5751	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5751	
	gaaagcaaac aagaccctcc	20
<210>	5752	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5752	
	atgtcagccg caggaagaa	19
<210>	5753	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5753	
	gccctctaca tcaaagccaa	20
<210>	5754	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5754	
	ccagaaagca aacaagaccc	20
<210>	5755	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5755	
	gctacaccct ttgctaactc	20
<210>	5756	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	5756	
	atcagcagaa gctccactca	20
<210>	5757	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5757	
	tccagaaagc aaacaagacc	20
<210>	5758	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5758	
	tagcagccaa cataggca	18
<210>	5759	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5759	
	agattcatcg catcaacacc	20
<210>	5760	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5760	
	ccaaatatgc ctgctgacaa	20
<210>	5761	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5761	
	gtagagcata gactaaatca gcc	23
<210>	5762	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    5762
gccataacg acatcacaat ttcc                24

<210>    5763
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5763
tctacatcaa agccaatcca c                21

<210>    5764
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5764
cacaacggca tcatcagaaa                20

<210>    5765
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5765
atagcagcca acataggca                19

<210>    5766
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5766
tccaagaaca cactcagaca                20

<210>    5767
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5767
catacaaact accaccatca ca                22

<210>    5768
<211>    21

```



```

<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5768
ctaacagaac cctccaggta a                21

<210>    5769
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5769
tgacagccct ctacatcaaa                20

<210>    5770
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5770
ccaagaacac actcagacat t                21

<210>    5771
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5771
tccaagaaca cactcagaca t                21

<210>    5772
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5772
atgacagccc tctacatcaa                20

<210>    5773
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5773
aacacgttca cgactcagta tctca            25

```

SEQLIST-20480.TXT

<210>	5774	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5774	
	gtagagcata gactaaatca gcc	23
<210>	5775	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5775	
	atcagcagaa gctccactca	20
<210>	5776	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5776	
	agcagccaac ataggcaa	18
<210>	5777	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5777	
	tccaagaaca cactcagaca	20
<210>	5778	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5778	
	tccaagaaca cactcagaca	20
<210>	5779	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5779	
gcagccaaca taggcaaa		18
<210>	5780	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5780	
atcagcagaa gtcctcactca		20
<210>	5781	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5781	
cccactgctg aacatcaatc ataaa		25
<210>	5782	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5782	
actacagcca taacctttcc a		21
<210>	5783	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5783	
ccaaatgtcc atccagcag		19
<210>	5784	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5784	
atcagcagaa gtcctcactca		20
<210>	5785	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    5785
gcaccaaag tccatccag                                19

<210>    5786
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5786
cctctacatc aaagccaatc ca                            22

<210>    5787
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5787
ccagcaccaa atgtccatc                                19

<210>    5788
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5788
ttactactct aacagaaccc tcc                            23

<210>    5789
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5789
tcaaagccaa tccacgca                                18

<210>    5790
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5790
aacacacagc ctccaaaac                                19

<210>    5791

```

```

<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5791
cagcaccaaa tgtccatcc 19

<210> 5792
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5792
tccaagaaca cactcagaca t 21

<210> 5793
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5793
catcaatttc ttcttcctca cactc 25

<210> 5794
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5794
agactcacia ggactatcag aa 22

<210> 5795
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5795
tccaagaaca cactcagaca t 21

<210> 5796
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5796

```

tccaagaaca cactcagaca	SEQLIST-20480.TXT	20
<210> 5797		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5797		
gccctctaca tcaaagcca		19
<210> 5798		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5798		
ccaagaacaa ggctctcca		19
<210> 5799		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5799		
ccagcaccaa atgtccatc		19
<210> 5800		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5800		
cgcatcaaca ccacagaaa		19
<210> 5801		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5801		
cgcatcaaca ccacagaaaa		20
<210> 5802		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

<223> Primer

<400> 5802
agcagcaaga ttagcagaag 20

<210> 5803
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5803
ccaagaacac actcagacat t 21

<210> 5804
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5804
gcaggcataa gtatctgatg aa 22

<210> 5805
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5805
gagcaagcat ttctctcaaa ttcca 25

<210> 5806
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5806
tcaacaccac agaaaactcc 20

<210> 5807
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5807
cctctacatc aaagccaatc ca 22

<210> 5808
<211> 20
<212> DNA

<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5808	
	acgcactaca ttccaggga	20
<210>	5809	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5809	
	ttccaagaaca cactcagaca t	21
<210>	5810	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5810	
	ttccaagaaca cactcagaca	20
<210>	5811	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5811	
	agaggtggca acactgtaa	19
<210>	5812	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5812	
	aagccaatcc acgcacgaa	19
<210>	5813	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5813	
	tcaaagccaa tccacgca	18

<210> 5814
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5814
 cctctacatc aaagccaatc ca 22

<210> 5815
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5815
 gccctctaca tcaaagccaa 20

<210> 5816
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5816
 gccctctaca tcaaagcca 19

<210> 5817
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5817
 catcgcatca acaccaca 18

<210> 5818
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 5818
 tcaaagccaa tccacgca 18

<210> 5819
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	5819	
cgcatcaaca ccacagaaa		19
<210>	5820	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5820	
gcccagcacc atacctctat t		21
<210>	5821	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5821	
cgcatcaaca ccacagaaaa		20
<210>	5822	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5822	
aaagcacaga aggaaagcac		20
<210>	5823	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5823	
gccctctaca tcaaagcca		19
<210>	5824	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5824	
caactacagc cataaccttt cc		22
<210>	5825	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	

```

<220>
<223>    Primer

<400>    5825
acaactacag ccataacctt tc                22

<210>    5826
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5826
tcaacaccac agaaaactcc                20

<210>    5827
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5827
catcgcatca acaccacaga aa                22

<210>    5828
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5828
tatagcagcc aacataggca aa                22

<210>    5829
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5829
tccaacaaag ccaacatctc                20

<210>    5830
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5830
cagaaccctg tgatgaatca a                21

<210>    5831
<211>    19

```

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5831
gcaacgcaa taacaagcc 19

<210> 5832
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5832
acgccaataa caagccatc 19

<210> 5833
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5833
cgccaataac aagccatcc 19

<210> 5834
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5834
cctctacatc aaagccaatc ca 22

<210> 5835
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5835
ccctctacat caaagccaat c 21

<210> 5836
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5836
gaagcagact tagaagcaga c 21

```

SEQLIST-20480.TXT

<210>	5837	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5837	
	catcgcatca acaccacaga aaa	23
<210>	5838	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5838	
	gccctctaca tcaaagcca	19
<210>	5839	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5839	
	gtctacctgt ccttcactc	20
<210>	5840	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5840	
	gcatcaacac cacagaaaac tcc	23
<210>	5841	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5841	
	aatgattcca gcaggcataa g	21
<210>	5842	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5842	
gtcttcctct tcttcttcct ca		22
<210>	5843	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5843	
acctgtcctt ccactctacc		20
<210>	5844	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5844	
agtcttcctc ttcttcttcc tc		22
<210>	5845	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5845	
atgtcagccg caggaagaag		20
<210>	5846	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5846	
atgtcagccg caggaagaag ag		22
<210>	5847	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5847	
cgcaggaaga agagtcaca		19
<210>	5848	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   5848
ctgaaatgtc gccaaagatca a                               21

<210>   5849
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5849
ctgtccttcc actctaccat c                               21

<210>   5850
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5850
tgaaagaacc tcaccgtcaa                               20

<210>   5851
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5851
taaagcccca ctgctgaa                               18

<210>   5852
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5852
cgcaggaaga agagtcaca                               19

<210>   5853
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5853
ctgtgtaata aaccaagaag tgcc                               24

<210>   5854

```

```

<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5854
ccatcaaaca agacagtaag tgaag 25

<210> 5855
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5855
gcccaaaaga ttagacaacc ac 22

<210> 5856
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5856
ccatcaaaca agacagtaag tgaag 25

<210> 5857
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5857
ccatcaaaca agacagtaag tgaag 25

<210> 5858
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5858
gtcacaaacta cagccataac c 21

<210> 5859
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5859

```


ccatcaaaca agacagtaag tgaag	SEQLIST-20480.TXT	25
<210> 5860		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5860		
cagaaccctg tgatgaatca a		21
<210> 5861		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5861		
cctctacatc aaagccaatc ca		22
<210> 5862		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5862		
ctgttgaata atgccgtcta ct		22
<210> 5863		
<211> 18		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5863		
ttagcagcat caccagca		18
<210> 5864		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5864		
gggaaggaca taaggtggta g		21
<210> 5865		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

<223>	Primer	
<400>	5865	
	ctgtccttcc actctacat	20
<210>	5866	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5866	
	agcagccaac ataggcaa	18
<210>	5867	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5867	
	gcagccaaca taggcaaa	18
<210>	5868	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5868	
	gtagccagta aaccaggaga	20
<210>	5869	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5869	
	cgcaggaaga agagtcacag	20
<210>	5870	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5870	
	ggtagccctt tccacaaaag tca	23
<210>	5871	
<211>	20	
<212>	DNA	

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 5871
gcacttccaa caaagccaac 20
<210> 5872
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5872
gtccttccac tctaccatca a 21
<210> 5873
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5873
atcagcagaa gctccactca 20
<210> 5874
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5874
gccctctaca tcaaagcca 19
<210> 5875
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5875
atcagcagaa gctccactca 20
<210> 5876
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5876
agtccagcaa tgaagccgag 20

```

SEQLIST-20480.TXT

<210>	5877	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5877	
	caaatatgcc tgctgacaac aa	22
<210>	5878	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5878	
	ccaaatatgc ctgctgacaa	20
<210>	5879	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5879	
	cgcatacaac ccacagaaaa	20
<210>	5880	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5880	
	actacagcca taacctttcc a	21
<210>	5881	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5881	
	caactacagc cataaccttt cc	22
<210>	5882	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	5882	
aaacaagacc ctcctactgt aa		22
<210>	5883	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5883	
ccactctacc atcaaacaag ac		22
<210>	5884	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5884	
cactcagaca ttttagtagc agca		24
<210>	5885	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5885	
agtccagcaa tgaagccgag		20
<210>	5886	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5886	
atcatccagc cagtcttcc		19
<210>	5887	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5887	
gagcaagcat ttctctcaaa ttcca		25
<210>	5888	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

<220>		
<223>	Primer	
<400>	5888	
	ggtagtatct aaggctccac tgaa	24
<210>	5889	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5889	
	ggtagtatct aaggctccac tgaaa	25
<210>	5890	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5890	
	acctgtcctt ccactctacc	20
<210>	5891	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5891	
	tgtccttcca ctctaccatc	20
<210>	5892	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5892	
	acaactacag ccataacctt tc	22
<210>	5893	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5893	
	gccagtaaac caggagaca	19
<210>	5894	
<211>	20	

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5894
tgaaagaacc tcaccgtcaa 20

<210> 5895
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5895
caacagtagt gcccaaaaga 20

<210> 5896
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5896
acaacggcga caagttcca 19

<210> 5897
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5897
aacacacagc ctccaaaac 19

<210> 5898
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5898
attcatcgca tcaacaccac 20

<210> 5899
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5899
gtcacaacta cagccataac c 21

```

SEQLIST-20480.TXT

<210>	5900	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5900	
	gacacatcta aagcacccac	20
<210>	5901	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5901	
	gcacttccaa caaagccaac	20
<210>	5902	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5902	
	tccagaaagc aaacaagacc	20
<210>	5903	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5903	
	acttccaaca aagccaacat c	21
<210>	5904	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5904	
	gtttacatag cccatctgcc	20
<210>	5905	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5905	
	agcaaacaag accctcctac	20
<210>	5906	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5906	
	ttacatagcc catctgcctt	20
<210>	5907	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5907	
	cataatcagg gacaacaacc a	21
<210>	5908	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5908	
	agaacgactt cagaatcacc a	21
<210>	5909	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5909	
	gcaagtccga tggcaaaa	18
<210>	5910	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5910	
	agcaagtccg atggcaaa	18
<210>	5911	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    5911
gccctctaca tcaaagccaa                20

<210>    5912
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5912
gccctctaca tcaaagcca                19

<210>    5913
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5913
catcgcatac acaccacag                19

<210>    5914
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5914
gcctatcctc agaataacca cca                23

<210>    5915
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5915
tgtagccagt aaaccaggag                20

<210>    5916
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5916
atgcaacagg gtacacaga                19

<210>    5917

```

```

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5917
agaacgactt cagaatcacc a                21

<210> 5918
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5918
agcaaacaag accctcctac                20

<210> 5919
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5919
ccttcactc taccatcaaa c                21

<210> 5920
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5920
ccttcactc taccatcaaa c                21

<210> 5921
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5921
gaaagcaaac aagaccctcc                20

<210> 5922
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5922

```

	SEQLIST-20480.TXT	
ccttccactc taccatcaaa c		21
<210> 5923		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5923		
gctcagagtc atcctcatca		20
<210> 5924		
<211> 24		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5924		
ctgtgtaata aaccaagaag tgcc		24
<210> 5925		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5925		
tccagaaagc aaacaagacc		20
<210> 5926		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5926		
ccttccactc taccatcaaa ca		22
<210> 5927		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5927		
aaacaagacc ctctactgt aa		22
<210> 5928		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    5928
agccacatca agcctacaat ac                22
<210>    5929
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5929
tccagaaagc aaacaagacc                    20
<210>    5930
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5930
ccttcactc taccatcaaa ca                22
<210>    5931
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5931
acatcaagcc tacaatacaa gcc              23
<210>    5932
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5932
aaacaagacc ctcctactgt aa              22
<210>    5933
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5933
tccagaaagc aaacaagacc                    20
<210>    5934
<211>    23
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 5934
caaacaagac cctcctactg taa 23
<210> 5935
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5935
gcaccaaata tgcctgctga 20
<210> 5936
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5936
gctcagagtc atcctcatca 20
<210> 5937
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5937
ccattccttg tgtgtcttct act 23
<210> 5938
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5938
ccactctacc atcaaacaag ac 22
<210> 5939
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 5939
agcaaacaag accctcctac 20

```

<210>	5940	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5940	
	caaatatgcc tgctgacaac aa	22
<210>	5941	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5941	
	ccaaatatgc ctgctgacaa	20
<210>	5942	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5942	
	gcaccaaata tgcctgctga	20
<210>	5943	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5943	
	cccttcaact ttgcctgac	19
<210>	5944	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5944	
	tcagtgagca gaggtggcaa	20
<210>	5945	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	5945	
gctaagccac atcaagccta caa		23
<210>	5946	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5946	
gataacagca gcatacagcc		20
<210>	5947	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5947	
tagaagcaga ctcgtcgca		19
<210>	5948	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5948	
ccacatcaag cctacaatac aagcc		25
<210>	5949	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5949	
aaccatacg atgccttct		19
<210>	5950	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5950	
agcaaacaag accctcctac		20
<210>	5951	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

<220>		
<223>	Primer	
<400>	5951	
	gaaagcaaac aagaccctcc	20
<210>	5952	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5952	
	gcaccaaata tgcctgctga	20
<210>	5953	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5953	
	ctgtccttcc actctaccat	20
<210>	5954	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5954	
	acacgaagtt gaacattgcc	20
<210>	5955	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5955	
	gccacaaggt taaagtcatt ca	22
<210>	5956	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5956	
	acctgtcctt ccactctacc	20
<210>	5957	
<211>	21	

```

<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5957
ggcacactga taaacaccag a                21

<210>    5958
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5958
tctacctgtc cttccactct a                21

<210>    5959
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5959
gcaccaaata tgcctgctga                20

<210>    5960
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5960
tcttcctctt cttcttcctc aac            23

<210>    5961
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5961
catacaaact accaccatca ca            22

<210>    5962
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    5962
cgtgatgtag ccacagtga                19

```

SEQLIST-20480.TXT

<210>	5963	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5963	
	cgcaagtgac cacgaatga	19
<210>	5964	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5964	
	ctctactcta agttggtgaa gaacc	25
<210>	5965	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5965	
	tacgagcaaa cagcctga	18
<210>	5966	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5966	
	ctaagttggtt gaagaaccga ga	22
<210>	5967	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5967	
	aagttggttga agaaccgaga g	21
<210>	5968	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	5968	
ctcagacatt ttagtagcag ca		22
<210>	5969	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5969	
caaacaagac cctcctactg taa		23
<210>	5970	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5970	
gcagcctctt caagattaaa acca		24
<210>	5971	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5971	
agcatttcct cgcacaacc		19
<210>	5972	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5972	
agcatcacgg tcaaactca		19
<210>	5973	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	5973	
gagcaagcat ttctctcaaa ttcca		25
<210>	5974	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   5974
gaagcagact tagaagcaga c                21

<210>   5975
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5975
tccagaaagc aaacaagacc                20

<210>   5976
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5976
aaacaagacc ctcctactgt aa            22

<210>   5977
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5977
atcaagccta caatacaagc c            21

<210>   5978
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5978
gtgatgagga gcgagaaga                19

<210>   5979
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   5979
tccagaaagc aaacaagacc                20

<210>   5980

```

```

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5980
cataatcagg gacaacaacc a 21

<210> 5981
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5981
ctcagtagta tcattccagcc a 21

<210> 5982
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5982
aaacaagacc ctcctactgt aa 22

<210> 5983
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5983
tccagaaagc aaacaagacc 20

<210> 5984
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5984
gctatccgca tcaacaact 19

<210> 5985
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5985

```

	SEQLIST-20480.TXT	
gcacaaacct acctcccttc		20
<210> 5986		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5986		
gcagcaagca caaaacaag		19
<210> 5987		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5987		
ccagaaagca aacaagacc		20
<210> 5988		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5988		
cataggctaa atccagcaga aa		22
<210> 5989		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5989		
caaatatgcc tgctgacaac aa		22
<210> 5990		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 5990		
tcgtcctctt cttcctcatc		20
<210> 5991		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    5991
aagcacagaa ggaaagcac                                19
<210>    5992
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5992
gcacagaagg aaagcacag                                19
<210>    5993
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5993
gcatcgtcct cttcttcctc                                20
<210>    5994
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5994
gccagtaaac caggagaca                                19
<210>    5995
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5995
gtagccagta aaccaggaga                                20
<210>    5996
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    5996
gcatcgtcct cttcttcctc                                20
<210>    5997
<211>    22
<212>    DNA

```



```

<213> Artificial Sequence
<220>
<223> Primer

<400> 5997
agtcttcctc ttcttcttcc tc 22

<210> 5998
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5998
tgttgaacct cctcttgtct g 21

<210> 5999
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5999
ccagtcttcc tcttcttctt cc 22

<210> 6000
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6000
gcatcgtcct cttcttcctc 20

<210> 6001
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6001
tgttgaacct cctcttgtct g 21

<210> 6002
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6002
agtcttcctc ttcttcttcc tc 22

```

SEQLIST-20480.TXT

<210> 6003
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6003
 agactcacaa ggactatcag aa 22

<210> 6004
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6004
 gccagtaaac caggagacaa 20

<210> 6005
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6005
 acatacaaac taccaccatc ac 22

<210> 6006
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6006
 ctgatagtaa tgccagcaca aa 22

<210> 6007
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6007
 gccagtaaac caggagaca 19

<210> 6008
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	6008	
cttttcacat agggcatcaa ca		22
<210>	6009	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6009	
gtagccagta aaccaggaga		20
<210>	6010	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6010	
acatacaaac taccaccatc ac		22
<210>	6011	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6011	
acaacagcct ctgctacaa		19
<210>	6012	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6012	
actcagcagc aagaacgca		19
<210>	6013	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6013	
gcaaaagcac agaaggaaag		20
<210>	6014	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

```

<220>
<223>    Primer

<400>    6014
gtagccagta aaccaggaga                                20

<210>    6015
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6015
gccagtaaac caggagaca                                19

<210>    6016
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6016
tgcctgaaat gtcgcaa                                  18

<210>    6017
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6017
acatacaaac taccaccatc ac                            22

<210>    6018
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6018
gtagccagta aaccaggaga                                20

<210>    6019
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6019
agtttcgcct caatccattc                                20

<210>    6020
<211>    21

```

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6020
agtttcgcct caatccattc a 21

<210> 6021
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6021
atykygmgsk akkygsgtg 19

<210> 6022
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6022
gtgygtgsat mscrcttca 19

<210> 6023
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6023
cttcackgwt ctsttgtkwg a 21

<210> 6024
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6024
agraymyrwc acstcmaskgg ytg 23

<210> 6025
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6025
aaaygmrtat armcrmcmyt atg 23

```

SEQLIST-20480.TXT

<210>	6026	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6026	
	crmcmytatg mrarawckwm gccca	25
<210>	6027	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6027	
	tctatcrsma kggatgtct	19
<210>	6028	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6028	
	ttagttkaaw ktttwgktr gt	22
<210>	6029	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6029	
	tagtgtrga gwargtrtaa aga	23
<210>	6030	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6030	
	amttrgcat awtwaactt	19
<210>	6031	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400> 6031	
actaawwwyt rgytsktmmc ytaa	24
<210> 6032	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6032	
twstcsgcaa tkrcyycsgc a	21
<210> 6033	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6033	
twstcsgcgt krcyycsgca	20
<210> 6034	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6034	
gggttgggac tatcctaagt gtga	24
<210> 6035	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<220>	
<221> misc_feature	
<222> 12	
<223> N is I (inosine)	
<400> 6035	
taacacacaa cnccatcatc a	21
<210> 6036	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6036	
ctaacatgct taggataatg g	21

SEQLIST-20480.TXT

<210> 6037
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6037
 gcctctcttg ttcttgctcg c 21

<210> 6038
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6038
 caggtaagcg taaaactcat c 21

<210> 6039
 <211> 4382
 <212> PRT
 <213> SARS coronavirus

<400> 6039
 Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
 1 5 10 15
 Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val Arg Gly Phe Gly
 20 25 30
 Asp Ser Val Glu Glu Ala Leu Ser Glu Ala Arg Glu His Leu Lys Asn
 35 40 45
 Gly Thr Cys Gly Leu Val Glu Leu Glu Lys Gly Val Leu Pro Gln Leu
 50 55 60
 Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Leu Ser Thr Asn
 65 70 75 80
 His Gly His Lys Val Val Glu Leu Val Ala Glu Met Asp Gly Ile Gln
 85 90 95
 Tyr Gly Arg Ser Gly Ile Thr Leu Gly Val Leu Val Pro His Val Gly
 100 105 110
 Glu Thr Pro Ile Ala Tyr Arg Asn Val Leu Leu Arg Lys Asn Gly Asn
 115 120 125
 Lys Gly Ala Gly Gly His Ser Tyr Gly Ile Asp Leu Lys Ser Tyr Asp
 130 135 140
 Leu Gly Asp Glu Leu Gly Thr Asp Pro Ile Glu Asp Tyr Glu Gln Asn
 145 150 155 160
 Trp Asn Thr Lys His Gly Ser Gly Ala Leu Arg Glu Leu Thr Arg Glu
 165 170 175
 Leu Asn Gly Gly Ala Val Thr Arg Tyr Val Asp Asn Asn Phe Cys Gly

SEQLIST-20480.TXT

180										185										190									
Pro	Asp	Gly	Tyr	Pro	Leu	Asp	Cys	Ile	Lys	Asp	Phe	Leu	Ala	Arg	Ala														
		195					200					205																	
Gly	Lys	Ser	Met	Cys	Thr	Leu	Ser	Glu	Gln	Leu	Asp	Tyr	Ile	Glu	Ser														
	210					215					220																		
Lys	Arg	Gly	Val	Tyr	Cys	Cys	Arg	Asp	His	Glu	His	Glu	Ile	Ala	Trp														
225					230					235					240														
Phe	Thr	Glu	Arg	Ser	Asp	Lys	Ser	Tyr	Glu	His	Gln	Thr	Pro	Phe	Glu														
				245					250					255															
Ile	Lys	Ser	Ala	Lys	Lys	Phe	Asp	Thr	Phe	Lys	Gly	Glu	Cys	Pro	Lys														
			260					265					270																
Phe	Val	Phe	Pro	Leu	Asn	Ser	Lys	Val	Lys	Val	Ile	Gln	Pro	Arg	Val														
		275					280					285																	
Glu	Lys	Lys	Lys	Thr	Glu	Gly	Phe	Met	Gly	Arg	Ile	Arg	Ser	Val	Tyr														
	290					295					300																		
Pro	Val	Ala	Ser	Pro	Gln	Glu	Cys	Asn	Asn	Met	His	Leu	Ser	Thr	Leu														
305					310					315					320														
Met	Lys	Cys	Asn	His	Cys	Asp	Glu	Val	Ser	Trp	Gln	Thr	Cys	Asp	Phe														
				325					330					335															
Leu	Lys	Ala	Thr	Cys	Glu	His	Cys	Gly	Thr	Glu	Asn	Leu	Val	Ile	Glu														
			340					345					350																
Gly	Pro	Thr	Thr	Cys	Gly	Tyr	Leu	Pro	Thr	Asn	Ala	Val	Val	Lys	Met														
		355					360					365																	
Pro	Cys	Pro	Ala	Cys	Gln	Asp	Pro	Glu	Ile	Gly	Pro	Glu	His	Ser	Val														
	370					375					380																		
Ala	Asp	Tyr	His	Asn	His	Ser	Asn	Ile	Glu	Thr	Arg	Leu	Arg	Lys	Gly														
385					390					395					400														
Gly	Arg	Thr	Arg	Cys	Phe	Gly	Gly	Cys	Val	Phe	Ala	Tyr	Val	Gly	Cys														
				405					410					415															
Tyr	Asn	Lys	Arg	Ala	Tyr	Trp	Val	Pro	Arg	Ala	Ser	Ala	Asp	Ile	Gly														
			420					425					430																
Ser	Gly	His	Thr	Gly	Ile	Thr	Gly	Asp	Asn	Val	Glu	Thr	Leu	Asn	Glu														
		435					440					445																	
Asp	Leu	Leu	Glu	Ile	Leu	Ser	Arg	Glu	Arg	Val	Asn	Ile	Asn	Ile	Val														
	450					455					460																		
Gly	Asp	Phe	His	Leu	Asn	Glu	Glu	Val	Ala	Ile	Ile	Leu	Ala	Ser	Phe														
465					470					475					480														
Ser	Ala	Ser	Thr	Ser	Ala	Phe	Ile	Asp	Thr	Ile	Lys	Ser	Leu	Asp	Tyr														
				485					490					495															
Lys	Ser	Phe	Lys	Thr	Ile	Val	Glu	Ser	Cys	Gly	Asn	Tyr	Lys	Val	Thr														
			500					505					510																
Lys	Gly	Lys	Pro	Val	Lys	Gly	Ala	Trp	Asn	Ile	Gly	Gln	Gln	Arg	Ser														

SEQLIST-20480.TXT

```

515                               520                               525
Val Leu Thr Pro Leu Cys Gly Phe Pro Ser Gln Ala Ala Gly Val Ile
530                               535                               540
Arg Ser Ile Phe Ala Arg Thr Leu Asp Ala Ala Asn His Ser Ile Pro
545                               550                               555
Asp Leu Gln Arg Ala Ala Val Thr Ile Leu Asp Gly Ile Ser Glu Gln
565                               570                               575
Ser Leu Arg Leu Val Asp Ala Met Val Tyr Thr Ser Asp Leu Leu Thr
580                               585                               590
Asn Ser Val Ile Ile Met Ala Tyr Val Thr Gly Gly Leu Val Gln Gln
595                               600                               605
Thr Ser Gln Trp Leu Ser Asn Leu Leu Gly Thr Thr Val Glu Lys Leu
610                               615                               620
Arg Pro Ile Phe Glu Trp Ile Glu Ala Lys Leu Ser Ala Gly Val Glu
625                               630                               635
Phe Leu Lys Asp Ala Trp Glu Ile Leu Lys Phe Leu Ile Thr Gly Val
645                               650                               655
Phe Asp Ile Val Lys Gly Gln Ile Gln Val Ala Ser Asp Asn Ile Lys
660                               665                               670
Asp Cys Val Lys Cys Phe Ile Asp Val Val Asn Lys Ala Leu Glu Met
675                               680                               685
Cys Ile Asp Gln Val Thr Ile Ala Gly Ala Lys Leu Arg Ser Leu Asn
690                               695                               700
Leu Gly Glu Val Phe Ile Ala Gln Ser Lys Gly Leu Tyr Arg Gln Cys
705                               710                               715
Ile Arg Gly Lys Glu Gln Leu Gln Leu Leu Met Pro Leu Lys Ala Pro
725                               730                               735
Lys Glu Val Thr Phe Leu Glu Gly Asp Ser His Asp Thr Val Leu Thr
740                               745                               750
Ser Glu Glu Val Val Leu Lys Asn Gly Glu Leu Glu Ala Leu Glu Thr
755                               760                               765
Pro Val Asp Ser Phe Thr Asn Gly Ala Ile Val Gly Thr Pro Val Cys
770                               775                               780
Val Asn Gly Leu Met Leu Leu Glu Ile Lys Asp Lys Glu Gln Tyr Cys
785                               790                               795
Ala Leu Ser Pro Gly Leu Leu Ala Thr Asn Asn Val Phe Arg Leu Lys
805                               810                               815
Gly Gly Ala Pro Ile Lys Gly Val Thr Phe Gly Glu Asp Thr Val Trp
820                               825                               830
Glu Val Gln Gly Tyr Lys Asn Val Arg Ile Thr Phe Glu Leu Asp Glu
835                               840                               845
Arg Val Asp Lys Val Leu Asn Glu Lys Cys Ser Val Tyr Thr Val Glu

```

SEQLIST-20480.TXT

850		855		860
Ser 865	Gly Thr Glu Val Thr 870	Glu Phe Ala Cys Val 875	Val Val Ala Glu Ala Val 880	
Val Lys Thr Leu 885	Gln Pro Val Ser Asp Leu 890	Leu Thr Asn Met Gly 895	Ile	
Asp Leu Asp 900	Glu Trp Ser Val Ala Thr 905	Phe Tyr Leu Phe Asp 910	Asp Ala	
Gly Glu Glu 915	Asn Phe Ser Ser Arg 920	Met Tyr Cys Ser Phe 925	Tyr Pro Pro	
Asp Glu 930	Glu Glu Glu Asp Asp 935	Ala Glu Cys Glu Glu 940	Glu Glu Ile Asp	
Glu Thr Cys Glu His 945	Glu Tyr Gly Thr Glu 950	Asp 955	Asp Tyr Gln Gly Leu 960	
Pro Leu Glu Phe 965	Gly Ala Ser Ala Glu Thr 970	Val Arg Val Glu Glu 975	Glu	
Glu Glu Glu 980	Asp Trp Leu Asp Asp Thr 985	Thr Glu Gln Ser Glu 990	Ile Glu	
Pro Glu Pro 995	Glu Pro Thr Pro Glu Glu 1000	Pro Val Asn Gln Phe Thr Gly 1005		
Tyr Leu Lys Leu Thr 1010	Asp Asp Asn Val Ala Ile Lys 1015	Cys Val Asp Ile Val 1020		
Lys Glu Ala Gln Ser 1025	Ala Asn Pro Met Val 1030	Ile Val Asn Ala Ala Asn 1035	1040	
Ile His Leu Lys 1045	His Gly Gly Gly Val Ala Gly Ala Leu Asn Lys Ala 1050	1055		
Thr Asn Gly Ala Met Gln Lys Glu 1060	Ser Asp Asp Tyr Ile Lys Leu Asn 1065	1070		
Gly Pro Leu Thr Val Gly Gly 1075	Ser Cys Leu Leu Ser Gly His Asn Leu 1080	1085		
Ala Lys Lys Cys Leu His 1090	Val Val Gly Pro Asn Leu Asn Ala Gly Glu 1095	1100		
Asp Ile Gln Leu Leu 1105	Lys Ala Ala Tyr Glu Asn Phe Asn Ser Gln Asp 1110	1115	1120	
Ile Leu Leu Ala Pro 1125	Leu Leu Ser Ala Gly Ile Phe Gly Ala Lys Pro 1130	1135		
Leu Gln Ser Leu Gln Val Cys Val 1140	Gln Thr Val Arg Thr Gln Val Tyr 1145	1150		
Ile Ala Val Asn Asp Lys Ala 1155	Leu Tyr Glu Gln Val Val Met Asp Tyr 1160	1165		
Leu Asp Asn Leu Lys Pro 1170	Arg Val Glu Ala Pro Lys Gln Glu Glu Pro 1175	1180		
Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser Val Val Gln Lys				

SEQLIST-20480.TXT

1185 1190 1195 1200

Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile Asp Glu Val Thr
 1205 1210 1215

Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys Leu Leu Leu Phe
 1220 1225 1230

Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln Asn Met Leu Arg
 1235 1240 1245

Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro Tyr Met Val Gly
 1250 1255 1260

Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val Ile Pro Ser Lys
 1265 1270 1275 1280

Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala Leu Lys Lys Val
 1285 1290 1295

Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln Gly Cys Ala Gly
 1300 1305 1310

Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys Cys Lys Ser Ala
 1315 1320 1325

Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys Glu Glu Ile Leu
 1330 1335 1340

Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala His Ala Glu Glu
 1345 1350 1355 1360

Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg Ala Ile Met Ala
 1365 1370 1375

Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln Glu Gly Ile Val
 1380 1385 1390

Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys Glu Pro Val Ala
 1395 1400 1405

Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro Leu Val Thr Met
 1410 1415 1420

Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu Glu Ala Ala Arg
 1425 1430 1435 1440

Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser Val Ser Ser Pro
 1445 1450 1455

Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser Ser Ser Lys Thr
 1460 1465 1470

Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala Gly Ser Tyr Arg
 1475 1480 1485

Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly Val Glu Phe Leu
 1490 1495 1500

Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu Ser Pro Val Glu
 1505 1510 1515 1520

Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys Leu Lys Ser Leu

SEQLIST-20480.TXT

```

1525                               1530                               1535
Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe Thr Thr Val Asp
1540                               1545                               1550
Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser Met Thr Tyr Gly
1555                               1560                               1565
Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp Val Thr Lys Ile
1570                               1575                               1580
Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe Val Leu Pro Ser
1585                               1590                               1595
Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr His Thr Leu Asp
1605                               1610                               1615
Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn His Thr Lys Lys
1620                               1625                               1630
Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile Lys Trp Ala Asp
1635                               1640                               1645
Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu Gln Gln Leu Glu
1650                               1655                               1660
Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr Tyr Arg Ala Arg
1665                               1670                               1675
Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu Ala Tyr Ser Asn
1685                               1690                               1695
Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr Met Thr His Leu
1700                               1705                               1710
Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val Leu Asn Val Val
1715                               1720                               1725
Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr Gly Val Glu Ala
1730                               1735                               1740
Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu Lys Thr Gly Val
1745                               1750                               1755
Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln Tyr Leu Val Gln
1765                               1770                               1775
Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro Ala Glu Tyr Lys
1780                               1785                               1790
Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr Thr Gly Asn Tyr
1795                               1800                               1805
Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu Thr Leu Tyr Arg
1810                               1815                               1820
Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr Lys Gly Pro Val
1825                               1830                               1835
Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr Thr Ile Lys Pro
1845                               1850                               1855
Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu Ile Glu Pro Lys

```

SEQLIST-20480.TXT

1860 1865 1870
 Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr Thr Glu Gln Pro
 1875 1880 1885
 Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala Ser Phe Asp Asn
 1890 1895 1900
 Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp Asp Leu Asn Gln
 1905 1910 1915 1920
 Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu Ser Val Thr Phe
 1925 1930 1935
 Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp Tyr Arg His Tyr
 1940 1945 1950
 Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His Lys Pro Ile Val
 1955 1960 1965
 Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe Lys Pro Asn Thr
 1970 1975 1980
 Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val Asp Thr Ser Asn
 1985 1990 1995 2000
 Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly Met Asp Asn Leu
 2005 2010 2015
 Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val Val Glu Asn Pro
 2020 2025 2030
 Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys Thr Thr Glu Val
 2035 2040 2045
 Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly Val Lys Val Thr
 2050 2055 2060
 Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr Val Glu Asn Thr
 2065 2070 2075 2080
 Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu Ala Leu Gly Leu
 2085 2090 2095
 Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn Ser Val Pro Trp
 2100 2105 2110
 Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly Gln Ala Ala Ile
 2115 2120 2125
 Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg Val Phe Asn Asn
 2130 2135 2140
 Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu Cys Thr Phe Thr
 2145 2150 2155 2160
 Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro Thr Thr Ile Ala
 2165 2170 2175
 Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu Asp Ala Gly Ile
 2180 2185 2190
 Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe Thr Ile Ala Met

SEQLIST-20480.TXT

2195 2200 2205
 Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu Ile Cys Val Thr
 2210 2215 2220
 Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala Pro Ser Tyr Cys
 2225 2230 2235 2240
 Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn Val Thr Thr Met
 2245 2250 2255
 Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys Leu Ser Gly Leu
 2260 2265 2270
 Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile Gln Val Thr Ile
 2275 2280 2285
 Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu Ala Ala Glu Trp
 2290 2295 2300
 Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr Leu Leu Gly Leu
 2305 2310 2315 2320
 Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala Ser His Phe Ile
 2325 2330 2335
 Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile Val Gln Met Ala
 2340 2345 2350
 Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe Ala Ser Phe Tyr
 2355 2360 2365
 Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly Cys Thr Ser Ser
 2370 2375 2380
 Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr Arg Val Glu Cys
 2385 2390 2395 2400
 Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr Val Tyr Ala Asn
 2405 2410 2415
 Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn Cys Leu Asn Cys
 2420 2425 2430
 Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp Glu Val Ala Arg
 2435 2440 2445
 Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro Thr Asp Gln Ser
 2450 2455 2460
 Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly Ala Leu His Leu
 2465 2470 2475 2480
 Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg His Pro Leu Ser
 2485 2490 2495
 His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn Thr Lys Gly Ser
 2500 2505 2510
 Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser Lys Cys Asp Glu
 2515 2520 2525
 Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln Leu Met Cys Gln

SEQLIST-20480.TXT

2530 2535 2540
 Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp Val Gly Asp Ser
 2545 2550 2555 2560
 Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val Asp Thr Phe Ser
 2565 2570 2575
 Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala Leu Val Ala Thr
 2580 2585 2590
 Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp Gly Val Leu Ser
 2595 2600 2605
 Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp Thr Asp Val Asp
 2610 2615 2620
 Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His His Ser Asp Leu
 2625 2630 2635 2640
 Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu Thr Tyr Asn Lys
 2645 2650 2655
 Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys Ile Asp Cys Asn
 2660 2665 2670
 Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His Asn Val Ser Leu
 2675 2680 2685
 Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu Gln Leu Arg Lys
 2690 2695 2700
 Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro Phe Arg Leu Thr
 2705 2710 2715 2720
 Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr Thr Lys Ile Ser
 2725 2730 2735
 Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys Leu Met Leu Lys
 2740 2745 2750
 Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys Tyr Ile Val Met
 2755 2760 2765
 Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr Asn Glu Ile Ile
 2770 2775 2780
 Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp Ile Ile Ser Thr
 2785 2790 2795 2800
 Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp Ala Trp Phe Ser
 2805 2810 2815
 Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys Pro Val Val Ala
 2820 2825 2830
 Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro Gly Leu Pro Gly
 2835 2840 2845
 Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His Phe Leu Pro Arg
 2850 2855 2860
 Val Phe Ser Ala Val Gly Asn Ile Cys Tyr Thr Pro Ser Lys Leu Ile

2865 2870 2875 2880

Page 1083

SEQLIST-20480.TXT

```

3205                               3210                               3215
Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln Pro Pro Gln Thr
3220                               3225                               3230
Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg Lys Met Ala Phe
3235                               3240                               3245
Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val Thr Cys Gly Thr
3250                               3255                               3260
Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val Tyr Cys Pro Arg
3265                               3270                               3275
His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro Asn Tyr Glu Asp
3285                               3290                               3295
Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val Gln Ala Gly Asn
3300                               3305                               3310
Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn Cys Leu Leu Arg
3315                               3320                               3325
Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys Tyr Lys Phe Val
3330                               3335                               3340
Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala Cys Tyr Asn Gly
3345                               3350                               3355
Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro Asn His Thr Ile
3365                               3370                               3375
Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val Gly Phe Asn Ile
3380                               3385                               3390
Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His Met Glu Leu Pro
3395                               3400                               3405
Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys Phe Tyr Gly Pro
3410                               3415                               3420
Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr Asp Thr Thr Ile
3425                               3430                               3435
Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val Ile Asn Gly Asp
3445                               3450                               3455
Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn Asp Phe Asn Leu
3460                               3465                               3470
Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln Asp His Val Asp
3475                               3480                               3485
Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala Val Leu Asp Met
3490                               3495                               3500
Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met Asn Gly Arg Thr
3505                               3510                               3515
Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr Pro Phe Asp Val
3525                               3530                               3535
Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys Phe Lys Lys Ile

```

SEQLIST-20480.TXT

3540 3545 3550

Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe Leu Thr Ser Leu
3555 3560 3565

Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe Phe Phe Val Tyr
3570 3575 3580

Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met Ala Ile Ala Ala
3585 3590 3595 3600

Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe Leu Cys Leu Phe
3605 3610 3615

Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn Met Val Tyr Met
3620 3625 3630

Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu Glu Leu Ala Asp
3635 3640 3645

Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val Met Tyr Ala Ser
3650 3655 3660

Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr Val Tyr Asp Asp
3665 3670 3675 3680

Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile Thr Leu Val Tyr
3685 3690 3695

Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile Ser Met Trp Ala
3700 3705 3710

Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val Val Thr Thr Ile
3715 3720 3725

Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val Glu Tyr Tyr Pro
3730 3735 3740

Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile Met Leu Val Tyr
3745 3750 3755 3760

Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly Leu Phe Cys Leu
3765 3770 3775

Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr Asp Tyr Leu Val
3780 3785 3790

Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly Leu Leu Pro Pro
3795 3800 3805

Lys Ser Ser Ile Asp Ala Phe Lys Leu Asn Ile Lys Leu Leu Gly Ile
3810 3815 3820

Gly Gly Lys Pro Cys Ile Lys Val Ala Thr Val Gln Ser Lys Met Ser
3825 3830 3835 3840

Asp Val Lys Cys Thr Ser Val Val Leu Leu Ser Val Leu Gln Gln Leu
3845 3850 3855

Arg Val Glu Ser Ser Ser Lys Leu Trp Ala Gln Cys Val Gln Leu His
3860 3865 3870

Asn Asp Ile Leu Leu Ala Lys Asp Thr Thr Glu Ala Phe Glu Lys Met

SEQLIST-20480.TXT

3875	3880	3885
Val Ser Leu Leu Ser Val	Leu Leu Ser Met Gln Gly Ala Val Asp Ile	
3890	3895	3900
Asn Arg Leu Cys Glu Glu Met Leu Asp Asn Arg Ala Thr Leu Gln Ala		
3905	3910	3915
Ile Ala Ser Glu Phe Ser Ser Leu Pro Ser Tyr Ala Ala Tyr Ala Thr		
	3925	3930
Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala Asn Gly Asp Ser Glu Val		
	3940	3945
Val Leu Lys Lys Leu Lys Lys Ser Leu Asn Val Ala Lys Ser Glu Phe		
	3955	3960
Asp Arg Asp Ala Ala Met Gln Arg Lys Leu Glu Lys Met Ala Asp Gln		
	3970	3975
Ala Met Thr Gln Met Tyr Lys Gln Ala Arg Ser Glu Asp Lys Arg Ala		
	3985	3990
Lys Val Thr Ser Ala Met Gln Thr Met Leu Phe Thr Met Leu Arg Lys		
	4005	4010
Leu Asp Asn Asp Ala Leu Asn Asn Ile Ile Asn Asn Ala Arg Asp Gly		
	4020	4025
Cys Val Pro Leu Asn Ile Ile Pro Leu Thr Thr Ala Ala Lys Leu Met		
	4035	4040
Val Val Val Pro Asp Tyr Gly Thr Tyr Lys Asn Thr Cys Asp Gly Asn		
	4050	4055
Thr Phe Thr Tyr Ala Ser Ala Leu Trp Glu Ile Gln Gln Val Val Asp		
	4065	4070
Ala Asp Ser Lys Ile Val Gln Leu Ser Glu Ile Asn Met Asp Asn Ser		
	4085	4090
Pro Asn Leu Ala Trp Pro Leu Ile Val Thr Ala Leu Arg Ala Asn Ser		
	4100	4105
Ala Val Lys Leu Gln Asn Asn Glu Leu Ser Pro Val Ala Leu Arg Gln		
	4115	4120
Met Ser Cys Ala Ala Gly Thr Thr Gln Thr Ala Cys Thr Asp Asp Asn		
	4130	4135
Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg Phe Val Leu Ala		
	4145	4150
Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg Phe Pro Lys Ser		
	4165	4170
Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro Pro Cys Arg Phe		
	4180	4185
Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr Leu Tyr Phe Ile		
	4195	4200
Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu Gly Ser Leu Ala		

SEQLIST-20480.TXT

4210

4215

4220

Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu Val Pro Ala Asn
 4225 4230 4235 4240
 Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp Pro Ala Lys Ala
 4245 4250 4255
 Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile Thr Asn Cys Val
 4260 4265 4270
 Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala Ile Thr Val Thr
 4275 4280 4285
 Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly Ala Ser Cys Cys
 4290 4295 4300
 Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro Lys Gly Phe Cys
 4305 4310 4315 4320
 Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr Cys Ala Asn Asp
 4325 4330 4335
 Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met
 4340 4345 4350
 Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met
 4355 4360 4365
 Gln Ser Ala Asp Ala Ser Thr Phe Leu Asn Gly Phe Ala Val
 4370 4375 4380

<210> 6040

<211> 163

<212> PRT

<213> SARS coronavirus

<400> 6040

Met Asn Lys Thr Gly Thr Leu Ser Met Ala Val Val His Ser Val Asn
 1 5 10 15
 Ser Leu Val Ser Ser Met Glu Val Gln Ser Leu Ala Met Ser Thr Thr
 20 25 30
 Ile Ser Val Ala Gln Met Gly Thr Leu Leu Ile Ala Ser Lys Ile Phe
 35 40 45
 Ser His Ala Arg Ala Ser Gln Cys Ala Leu Phe Pro Asn Asn Leu Ile
 50 55 60
 Thr Ser Ser Arg Arg Glu Val Ser Thr Ala Ala Val Thr Met Ser Met
 65 70 75 80
 Lys Leu Pro Gly Ser Leu Ser Ala Leu Ile Arg Ala Thr Ser Thr Arg
 85 90 95
 His Pro Ser Lys Leu Arg Val Pro Arg Asn Leu Thr Leu Ser Lys Gly
 100 105 110
 Asn Ala Gln Ser Leu Cys Phe Leu Leu Thr Gln Lys Ser Lys Ser Phe
 115 120 125
 Asn His Val Leu Lys Arg Lys Arg Leu Arg Val Ser Trp Gly Val Tyr

SEQLIST-20480.TXT

130

135

140

Ala Leu Cys Thr Leu Leu His Leu His Arg Ser Val Thr Ile Cys Thr
145 150 155 160

Cys Leu Pro

<210> 6041
<211> 2628
<212> PRT
<213> SARS coronavirus

<400> 6041
Met Ser Asn Tyr Gln His Glu Glu Thr Ile Tyr Asn Leu Val Lys Asp
1 5 10 15

Cys Pro Ala Val Ala Val His Asp Phe Phe Lys Phe Arg Val Asp Gly
20 25 30

Asp Met Val Pro His Ile Ser Arg Gln Arg Leu Thr Lys Tyr Thr Met
35 40 45

Ala Asp Leu Val Tyr Ala Leu Arg His Phe Asp Glu Gly Asn Cys Asp
50 55 60

Thr Leu Lys Glu Ile Leu Val Thr Tyr Asn Cys Cys Asp Asp Asp Tyr
65 70 75 80

Phe Asn Lys Lys Asp Trp Tyr Asp Phe Val Glu Asn Pro Asp Ile Leu
85 90 95

Arg Val Tyr Ala Asn Leu Gly Glu Arg Val Arg Gln Ser Leu Leu Lys
100 105 110

Thr Val Gln Phe Cys Asp Ala Met Arg Asp Ala Gly Ile Val Gly Val
115 120 125

Leu Thr Leu Asp Asn Gln Asp Leu Asn Gly Asn Trp Tyr Asp Phe Gly
130 135 140

Asp Phe Val Gln Val Ala Pro Gly Cys Gly Val Pro Ile Val Asp Ser
145 150 155 160

Tyr Tyr Ser Leu Leu Met Pro Ile Leu Thr Leu Thr Arg Ala Leu Ala
165 170 175

Ala Glu Ser His Met Asp Ala Asp Leu Ala Lys Pro Leu Ile Lys Trp
180 185 190

Asp Leu Leu Lys Tyr Asp Phe Thr Glu Glu Arg Leu Cys Leu Phe Asp
195 200 205

Arg Tyr Phe Lys Tyr Trp Asp Gln Thr Tyr His Pro Asn Cys Ile Asn
210 215 220

Cys Leu Asp Asp Arg Cys Ile Leu His Cys Ala Asn Phe Asn Val Leu
225 230 235 240

Phe Ser Thr Val Phe Pro Pro Thr Ser Phe Gly Pro Leu Val Arg Lys
245 250 255

Ile Phe Val Asp Gly Val Pro Phe Val Val Ser Thr Gly Tyr His Phe

SEQLIST-20480.TXT

260		265		270
Arg Glu Leu Gly Val Val His Asn Gln Asp Val Asn Leu His Ser Ser	275	280	285	
Arg Leu Ser Phe Lys Glu Leu Leu Val Tyr Ala Ala Asp Pro Ala Met	290	295	300	
His Ala Ala Ser Gly Asn Leu Leu Leu Asp Lys Arg Thr Thr Cys Phe	305	310	315	320
Ser Val Ala Ala Leu Thr Asn Asn Val Ala Phe Gln Thr Val Lys Pro	325	330	335	
Gly Asn Phe Asn Lys Asp Phe Tyr Asp Phe Ala Val Ser Lys Gly Phe	340	345	350	
Phe Lys Glu Gly Ser Ser Val Glu Leu Lys His Phe Phe Phe Ala Gln	355	360	365	
Asp Gly Asn Ala Ala Ile Ser Asp Tyr Asp Tyr Tyr Arg Tyr Asn Leu	370	375	380	
Pro Thr Met Cys Asp Ile Arg Gln Leu Leu Phe Val Val Glu Val Val	385	390	395	400
Asp Lys Tyr Phe Asp Cys Tyr Asp Gly Gly Cys Ile Asn Ala Asn Gln	405	410	415	
Val Ile Val Asn Asn Leu Asp Lys Ser Ala Gly Phe Pro Phe Asn Lys	420	425	430	
Trp Gly Lys Ala Arg Leu Tyr Tyr Asp Ser Met Ser Tyr Glu Asp Gln	435	440	445	
Asp Ala Leu Phe Ala Tyr Thr Lys Arg Asn Val Ile Pro Thr Ile Thr	450	455	460	
Gln Met Asn Leu Lys Tyr Ala Ile Ser Ala Lys Asn Arg Ala Arg Thr	465	470	475	480
Val Ala Gly Val Ser Ile Cys Ser Thr Met Thr Asn Arg Gln Phe His	485	490	495	
Gln Lys Leu Leu Lys Ser Ile Ala Ala Thr Arg Gly Ala Thr Val Val	500	505	510	
Ile Gly Thr Ser Lys Phe Tyr Gly Gly Trp His Asn Met Leu Lys Thr	515	520	525	
Val Tyr Ser Asp Val Glu Thr Pro His Leu Met Gly Trp Asp Tyr Pro	530	535	540	
Lys Cys Asp Arg Ala Met Pro Asn Met Leu Arg Ile Met Ala Ser Leu	545	550	555	560
Val Leu Ala Arg Lys His Asn Thr Cys Cys Asn Leu Ser His Arg Phe	565	570	575	
Tyr Arg Leu Ala Asn Glu Cys Ala Gln Val Leu Ser Glu Met Val Met	580	585	590	
Cys Gly Gly Ser Leu Tyr Val Lys Pro Gly Gly Thr Ser Ser Gly Asp				

SEQLIST-20480.TXT

595	600	605													
Ala Thr Thr Ala Tyr Ala Asn Ser Val Phe Asn Ile Cys Gln Ala Val	610	615	620												
Thr Ala Asn Val Asn Ala Leu Leu Ser Thr Asp Gly Asn Lys Ile Ala	625	630	635												
Asp Lys Tyr Val Arg Asn Leu Gln His Arg Leu Tyr Glu Cys Leu Tyr	645	650	655												
Arg Asn Arg Asp Val Asp His Glu Phe Val Asp Glu Phe Tyr Ala Tyr	660	665	670												
Leu Arg Lys His Phe Ser Met Met Ile Leu Ser Asp Asp Ala Val Val	675	680	685												
Cys Tyr Asn Ser Asn Tyr Ala Ala Gln Gly Leu Val Ala Ser Ile Lys	690	695	700												
Asn Phe Lys Ala Val Leu Tyr Tyr Gln Asn Asn Val Phe Met Ser Glu	705	710	715												
Ala Lys Cys Trp Thr Glu Thr Asp Leu Thr Lys Gly Pro His Glu Phe	725	730	735												
Cys Ser Gln His Thr Met Leu Val Lys Gln Gly Asp Asp Tyr Val Tyr	740	745	750												
Leu Pro Tyr Pro Asp Pro Ser Arg Ile Leu Gly Ala Gly Cys Phe Val	755	760	765												
Asp Asp Ile Val Lys Thr Asp Gly Thr Leu Met Ile Glu Arg Phe Val	770	775	780												
Ser Leu Ala Ile Asp Ala Tyr Pro Leu Thr Lys His Pro Asn Gln Glu	785	790	795												
Tyr Ala Asp Val Phe His Leu Tyr Leu Gln Tyr Ile Arg Lys Leu His	805	810	815												
Asp Glu Leu Thr Gly His Met Leu Asp Met Tyr Ser Val Met Leu Thr	820	825	830												
Asn Asp Asn Thr Ser Arg Tyr Trp Glu Pro Glu Phe Tyr Glu Ala Met	835	840	845												
Tyr Thr Pro His Thr Val Leu Gln Ala Val Gly Ala Cys Val Leu Cys	850	855	860												
Asn Ser Gln Thr Ser Leu Arg Cys Gly Ala Cys Ile Arg Arg Pro Phe	865	870	875												
Leu Cys Cys Lys Cys Cys Tyr Asp His Val Ile Ser Thr Ser His Lys	885	890	895												
Leu Val Leu Ser Val Asn Pro Tyr Val Cys Asn Ala Pro Gly Cys Asp	900	905	910												
Val Thr Asp Val Thr Gln Leu Tyr Leu Gly Gly Met Ser Tyr Tyr Cys	915	920	925												
Lys Ser His Lys Pro Pro Ile Ser Phe Pro Leu Cys Ala Asn Gly Gln															

SEQLIST-20480.TXT

930 935 940
 Val Phe Gly Leu Tyr Lys Asn Thr Cys Val Gly Ser Asp Asn Val Thr
 945 950 955 960
 Asp Phe Asn Ala Ile Ala Thr Cys Asp Trp Thr Asn Ala Gly Asp Tyr
 965 970 975
 Ile Leu Ala Asn Thr Cys Thr Glu Arg Leu Lys Leu Phe Ala Ala Glu
 980 985 990
 Thr Leu Lys Ala Thr Glu Glu Thr Phe Lys Leu Ser Tyr Gly Ile Ala
 995 1000 1005
 Thr Val Arg Glu Val Leu Ser Asp Arg Glu Leu His Leu Ser Trp Glu
 1010 1015 1020
 Val Gly Lys Pro Arg Pro Pro Leu Asn Arg Asn Tyr Val Phe Thr Gly
 1025 1030 1035 1040
 Tyr Arg Val Thr Lys Asn Ser Lys Val Gln Ile Gly Glu Tyr Thr Phe
 1045 1050 1055
 Glu Lys Gly Asp Tyr Gly Asp Ala Val Val Tyr Arg Gly Thr Thr Thr
 1060 1065 1070
 Tyr Lys Leu Asn Val Gly Asp Tyr Phe Val Leu Thr Ser His Thr Val
 1075 1080 1085
 Met Pro Leu Ser Ala Pro Thr Leu Val Pro Gln Glu His Tyr Val Arg
 1090 1095 1100
 Ile Thr Gly Leu Tyr Pro Thr Leu Asn Ile Ser Asp Glu Phe Ser Ser
 1105 1110 1115 1120
 Asn Val Ala Asn Tyr Gln Lys Val Gly Met Gln Lys Tyr Ser Thr Leu
 1125 1130 1135
 Gln Gly Pro Pro Gly Thr Gly Lys Ser His Phe Ala Ile Gly Leu Ala
 1140 1145 1150
 Leu Tyr Tyr Pro Ser Ala Arg Ile Val Tyr Thr Ala Cys Ser His Ala
 1155 1160 1165
 Ala Val Asp Ala Leu Cys Glu Lys Ala Leu Lys Tyr Leu Pro Ile Asp
 1170 1175 1180
 Lys Cys Ser Arg Ile Ile Pro Ala Arg Ala Arg Val Glu Cys Phe Asp
 1185 1190 1195 1200
 Lys Phe Lys Val Asn Ser Thr Leu Glu Gln Tyr Val Phe Cys Thr Val
 1205 1210 1215
 Asn Ala Leu Pro Glu Thr Thr Ala Asp Ile Val Val Phe Asp Glu Ile
 1220 1225 1230
 Ser Met Ala Thr Asn Tyr Asp Leu Ser Val Val Asn Ala Arg Leu Arg
 1235 1240 1245
 Ala Lys His Tyr Val Tyr Ile Gly Asp Pro Ala Gln Leu Pro Ala Pro
 1250 1255 1260
 Arg Thr Leu Leu Thr Lys Gly Thr Leu Glu Pro Glu Tyr Phe Asn Ser

SEQLIST-20480.TXT

1265 1270 1275 1280
Val Cys Arg Leu Met Lys Thr Ile Gly Pro Asp Met Phe Leu Gly Thr
 1285 1290 1295
Cys Arg Arg Cys Pro Ala Glu Ile Val Asp Thr Val Ser Ala Leu Val
 1300 1305 1310
Tyr Asp Asn Lys Leu Lys Ala His Lys Asp Lys Ser Ala Gln Cys Phe
 1315 1320 1325
Lys Met Phe Tyr Lys Gly Val Ile Thr His Asp Val Ser Ser Ala Ile
 1330 1335 1340
Asn Arg Pro Gln Ile Gly Val Val Arg Glu Phe Leu Thr Arg Asn Pro
1345 1350 1355 1360
Ala Trp Arg Lys Ala Val Phe Ile Ser Pro Tyr Asn Ser Gln Asn Ala
 1365 1370 1375
Val Ala Ser Lys Ile Leu Gly Leu Pro Thr Gln Thr Val Asp Ser Ser
 1380 1385 1390
Gln Gly Ser Glu Tyr Asp Tyr Val Ile Phe Thr Gln Thr Thr Glu Thr
 1395 1400 1405
Ala His Ser Cys Asn Val Asn Arg Phe Asn Val Ala Ile Thr Arg Ala
 1410 1415 1420
Lys Ile Gly Ile Leu Cys Ile Met Ser Asp Arg Asp Leu Tyr Asp Lys
1425 1430 1435 1440
Leu Gln Phe Thr Ser Leu Glu Ile Pro Arg Arg Asn Val Ala Thr Leu
 1445 1450 1455
Gln Ala Glu Asn Val Thr Gly Leu Phe Lys Asp Cys Ser Lys Ile Ile
 1460 1465 1470
Thr Gly Leu His Pro Thr Gln Ala Pro Thr His Leu Ser Val Asp Ile
 1475 1480 1485
Lys Phe Lys Thr Glu Gly Leu Cys Val Asp Ile Pro Gly Ile Pro Lys
 1490 1495 1500
Asp Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly Phe Lys Met Asn
1505 1510 1515 1520
Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr Arg Glu Glu Ala
 1525 1530 1535
Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val Glu Gly Cys His
 1540 1545 1550
Ala Thr Arg Asp Ala Val Gly Thr Asn Leu Pro Leu Gln Leu Gly Phe
 1555 1560 1565
Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly Tyr Val Asp Thr
 1570 1575 1580
Glu Asn Asn Thr Glu Phe Thr Arg Val Asn Ala Lys Pro Pro Pro Gly
1585 1590 1595 1600
Asp Gln Phe Lys His Leu Ile Pro Leu Met Tyr Lys Gly Leu Pro Trp

SEQLIST-20480.TXT

1605	1610	1615
Asn Val Val Arg Ile Lys Ile Val Gln Met Leu Ser Asp Thr Leu Lys		
1620	1625	1630
Gly Leu Ser Asp Arg Val Val Phe Val Leu Trp Ala His Gly Phe Glu		
1635	1640	1645
Leu Thr Ser Met Lys Tyr Phe Val Lys Ile Gly Pro Glu Arg Thr Cys		
1650	1655	1660
Cys Leu Cys Asp Lys Arg Ala Thr Cys Phe Ser Thr Ser Ser Asp Thr		
1665	1670	1675
Tyr Ala Cys Trp Asn His Ser Val Gly Phe Asp Tyr Val Tyr Asn Pro		
1685	1690	1695
Phe Met Ile Asp Val Gln Gln Trp Gly Phe Thr Gly Asn Leu Gln Ser		
1700	1705	1710
Asn His Asp Gln His Cys Gln Val His Gly Asn Ala His Val Ala Ser		
1715	1720	1725
Cys Asp Ala Ile Met Thr Arg Cys Leu Ala Val His Glu Cys Phe Val		
1730	1735	1740
Lys Arg Val Asp Trp Ser Val Glu Tyr Pro Ile Ile Gly Asp Glu Leu		
1745	1750	1755
Arg Val Asn Ser Ala Cys Arg Lys Val Gln His Met Val Val Lys Ser		
1765	1770	1775
Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp Ile Gly Asn Pro		
1780	1785	1790
Lys Ala Ile Lys Cys Val Pro Gln Ala Glu Val Glu Trp Lys Phe Tyr		
1795	1800	1805
Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile Glu Glu Leu Phe		
1810	1815	1820
Tyr Ser Tyr Ala Thr His His Asp Lys Phe Thr Asp Gly Val Cys Leu		
1825	1830	1835
Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro Ala Asn Ala Ile Val Cys		
1845	1850	1855
Arg Phe Asp Thr Arg Val Leu Ser Asn Leu Asn Leu Pro Gly Cys Asp		
1860	1865	1870
Gly Gly Ser Leu Tyr Val Asn Lys His Ala Phe His Thr Pro Ala Phe		
1875	1880	1885
Asp Lys Ser Ala Phe Thr Asn Leu Lys Gln Leu Pro Phe Phe Tyr Tyr		
1890	1895	1900
Ser Asp Ser Pro Cys Glu Ser His Gly Lys Gln Val Val Ser Asp Ile		
1905	1910	1915
Asp Tyr Val Pro Leu Lys Ser Ala Thr Cys Ile Thr Arg Cys Asn Leu		
1925	1930	1935
Gly Gly Ala Val Cys Arg His His Ala Asn Glu Tyr Arg Gln Tyr Leu		

SEQLIST-20480.TXT

1940	1945	1950
Asp Ala Tyr Asn Met Met Ile Ser Ala Gly Phe Ser Leu Trp Ile Tyr 1955 1960 1965		
Lys Gln Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe Thr Arg Leu Gln 1970 1975 1980		
Ser Leu Glu Asn Val Ala Tyr Asn Val Val Asn Lys Gly His Phe Asp 1985 1990 2000		
Gly His Ala Gly Glu Ala Pro Val Ser Ile Ile Asn Asn Ala Val Tyr 2005 2010 2015		
Thr Lys Val Asp Gly Ile Asp Val Glu Ile Phe Glu Asn Lys Thr Thr 2020 2025 2030		
Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys Arg Asn Ile Lys 2035 2040 2045		
Pro Val Pro Glu Ile Lys Ile Leu Asn Asn Leu Gly Val Asp Ile Ala 2050 2055 2060		
Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Glu Ala Pro Ala His Val 2065 2070 2075 2080		
Ser Thr Ile Gly Val Cys Thr Met Thr Asp Ile Ala Lys Lys Pro Thr 2085 2090 2095		
Glu Ser Ala Cys Ser Ser Leu Thr Val Leu Phe Asp Gly Arg Val Glu 2100 2105 2110		
Gly Gln Val Asp Leu Phe Arg Asn Ala Arg Asn Gly Val Leu Ile Thr 2115 2120 2125		
Glu Gly Ser Val Lys Gly Leu Thr Pro Ser Lys Gly Pro Ala Gln Ala 2130 2135 2140		
Ser Val Asn Gly Val Thr Leu Ile Gly Glu Ser Val Lys Thr Gln Phe 2145 2150 2155 2160		
Asn Tyr Phe Lys Lys Val Asp Gly Ile Ile Gln Gln Leu Pro Glu Thr 2165 2170 2175		
Tyr Phe Thr Gln Ser Arg Asp Leu Glu Asp Phe Lys Pro Arg Ser Gln 2180 2185 2190		
Met Glu Thr Asp Phe Leu Glu Leu Ala Met Asp Glu Phe Ile Gln Arg 2195 2200 2205		
Tyr Lys Leu Glu Gly Tyr Ala Phe Glu His Ile Val Tyr Gly Asp Phe 2210 2215 2220		
Ser His Gly Gln Leu Gly Gly Leu His Leu Met Ile Gly Leu Ala Lys 2225 2230 2235 2240		
Arg Ser Gln Asp Ser Pro Leu Lys Leu Glu Asp Phe Ile Pro Met Asp 2245 2250 2255		
Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln Thr Gly Ser Ser 2260 2265 2270		
Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp Asp Phe Val Glu		

SEQLIST-20480.TXT

2275 2280 2285
 Ile Ile Lys Ser Gln Asp Leu Ser Val Ile Ser Lys Val Val Lys Val
 2290 2295 2300
 Thr Ile Asp Tyr Ala Glu Ile Ser Phe Met Leu Trp Cys Lys Asp Gly
 2305 2310 2315 2320
 His Val Glu Thr Phe Tyr Pro Lys Leu Gln Ala Ser Arg Ala Trp Gln
 2325 2330 2335
 Pro Gly Val Ala Met Pro Asn Leu Tyr Lys Met Gln Arg Met Leu Leu
 2340 2345 2350
 Glu Lys Cys Asp Leu Gln Asn Tyr Gly Glu Asn Ala Val Ile Pro Lys
 2355 2360 2365
 Gly Ile Met Met Asn Val Ala Lys Tyr Thr Gln Leu Cys Gln Tyr Leu
 2370 2375 2380
 Asn Thr Leu Thr Leu Ala Val Pro Tyr Asn Met Arg Val Ile His Phe
 2385 2390 2395 2400
 Gly Ala Gly Ser Asp Lys Gly Val Ala Pro Gly Thr Ala Val Leu Arg
 2405 2410 2415
 Gln Trp Leu Pro Thr Gly Thr Leu Leu Val Asp Ser Asp Leu Asn Asp
 2420 2425 2430
 Phe Val Ser Asp Ala Tyr Ser Thr Leu Ile Gly Asp Cys Ala Thr Val
 2435 2440 2445
 His Thr Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp Met Tyr Asp Pro
 2450 2455 2460
 Arg Thr Lys His Val Thr Lys Glu Asn Asp Ser Lys Glu Gly Phe Phe
 2465 2470 2475 2480
 Thr Tyr Leu Cys Gly Phe Ile Lys Gln Lys Leu Ala Leu Gly Gly Ser
 2485 2490 2495
 Ile Ala Val Lys Ile Thr Glu His Ser Trp Asn Ala Asp Leu Tyr Lys
 2500 2505 2510
 Leu Met Gly His Phe Ser Trp Trp Thr Ala Phe Val Thr Asn Val Asn
 2515 2520 2525
 Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Ala Asn Tyr Leu Gly Lys
 2530 2535 2540
 Pro Lys Glu Gln Ile Asp Gly Tyr Thr Met His Ala Asn Tyr Ile Phe
 2545 2550 2555 2560
 Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser Ser Tyr Ser Leu Phe Asp
 2565 2570 2575
 Met Ser Lys Phe Pro Leu Lys Leu Arg Gly Thr Ala Val Met Ser Leu
 2580 2585 2590
 Lys Glu Asn Gln Ile Asn Asp Met Ile Tyr Ser Leu Leu Glu Lys Gly
 2595 2600 2605
 Arg Leu Ile Ile Arg Glu Asn Asn Arg Val Val Val Ser Ser Asp Ile

2610

2615

Leu Val Asn Asn
2625

<210> 6042
<211> 1255
<212> PRT
<213> SARS coronavirus

<400> 6042
Met Phe Ile Phe Leu Phe Leu Thr Leu Thr Ser Gly Ser Asp Leu
1 5 10 15
Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr Thr Gln
20 25 30
His Thr Ser Ser Met Arg Gly Val Tyr Tyr Pro Asp Glu Ile Phe Arg
35 40 45
Ser Asp Thr Leu Tyr Leu Thr Gln Asp Leu Phe Leu Pro Phe Tyr Ser
50 55 60
Asn Val Thr Gly Phe His Thr Ile Asn His Thr Phe Gly Asn Pro Val
65 70 75 80
Ile Pro Phe Lys Asp Gly Ile Tyr Phe Ala Ala Thr Glu Lys Ser Asn
85 90 95
Val Val Arg Gly Trp Val Phe Gly Ser Thr Met Asn Asn Lys Ser Gln
100 105 110
Ser Val Ile Ile Ile Asn Asn Ser Thr Asn Val Val Ile Arg Ala Cys
115 120 125
Asn Phe Glu Leu Cys Asp Asn Pro Phe Phe Ala Val Ser Lys Pro Met
130 135 140
Gly Thr Gln Thr His Thr Met Ile Phe Asp Asn Ala Phe Asn Cys Thr
145 150 155 160
Phe Glu Tyr Ile Ser Asp Ala Phe Ser Leu Asp Val Ser Glu Lys Ser
165 170 175
Gly Asn Phe Lys His Leu Arg Glu Phe Val Phe Lys Asn Lys Asp Gly
180 185 190
Phe Leu Tyr Val Tyr Lys Gly Tyr Gln Pro Ile Asp Val Val Arg Asp
195 200 205
Leu Pro Ser Gly Phe Asn Thr Leu Lys Pro Ile Phe Lys Leu Pro Leu
210 215 220
Gly Ile Asn Ile Thr Asn Phe Arg Ala Ile Leu Thr Ala Phe Ser Pro
225 230 235 240
Ala Gln Asp Ile Trp Gly Thr Ser Ala Ala Ala Tyr Phe Val Gly Tyr
245 250 255
Leu Lys Pro Thr Thr Phe Met Leu Lys Tyr Asp Glu Asn Gly Thr Ile
260 265 270
Thr Asp Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys

SEQLIST-20480.TXT

275	280	285
Ser Val Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn		
290	295	300
Phe Arg Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn Ile Thr		
305	310	315
Asn Leu Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Lys Phe Pro Ser		
	325	330
Val Tyr Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala Asp Tyr		
	340	345
Ser Val Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys Tyr Gly		
	355	360
Val Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala		
	370	375
Asp Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly		
385	390	395
Gln Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe		
	405	410
Met Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser		
	420	425
Thr Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu		
	435	440
Arg Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly		
	450	455
Lys Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp		
465	470	475
Tyr Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val		
	485	490
Val Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly		
	500	505
Pro Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn		
	515	520
Phe Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg		
	530	535
Phe Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp		
545	550	555
Ser Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys		
	565	570
Ala Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ser Ser		
	580	585
Glu Val Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val Ser Thr		
	595	600
Ala Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr		

SEQLIST-20480.TXT

610		615		620
Gly 625	Asn	Asn	Val	Phe
		Gln 630	Thr	Gln
			Ala	Gly
			Cys 635	Leu
			Ile	Gly
			Ala	Glu 640
His	Val	Asp	Thr	Ser 645
			Tyr	Glu
			Cys	Asp
			Ile 650	Pro
			Ile	Gly
			Ala	Gly 655
Cys	Ala	Ser	Tyr 660	His
			Thr	Val
			Ser	Leu 665
			Arg	Ser
			Thr	Ser 670
			Gln	Lys
Ser	Ile	Val 675	Ala	Tyr
			Thr	Met
			Ser 680	Leu
			Gly	Ala
			Asp	Ser 685
			Ser	Ile
			Ala	
Tyr	Ser 690	Asn	Asn	Thr
			Ile	Ala 695
			Ile	Pro
			Thr	Asn
			Phe 700	Ser
			Ile	Ser
			Ile	
Thr 705	Thr	Glu	Val	Met
			Pro 710	Val
			Ser	Met
			Ala	Lys 715
			Thr	Ser
			Val	Asp
			Cys	720
Asn	Met	Tyr	Ile	Cys 725
			Gly	Asp
			Ser	Thr
			Glu 730	Cys
			Ala	Asn
			Leu	Leu 735
			Leu	
Gln	Tyr	Gly	Ser 740	Phe
			Cys	Thr
			Gln	Leu 745
			Asn	Arg
			Ala	Leu
			Ser 750	Gly
			Ile	
Ala	Ala	Glu 755	Gln	Asp
			Arg	Asn
			Thr 760	Arg
			Glu	Val
			Phe	Ala 765
			Gln	Val
			Lys	
Gln	Met 770	Tyr	Lys	Thr
			Pro	Thr 775
			Leu	Lys
			Tyr	Phe
			Gly 780	Gly
			Phe	Asn
			Phe	
Ser 785	Gln	Ile	Leu	Pro
			Asp 790	Pro
			Leu	Lys
			Pro	Thr 795
			Lys	Arg
			Ser	Phe
			Ile	800
Glu	Asp	Leu	Leu	Phe 805
			Asn	Lys
			Val	Thr
			Leu 810	Ala
			Asp	Ala
			Gly	Phe
			815	Met
Lys	Gln	Tyr	Gly 820	Glu
			Cys	Leu
			Gly	Asp 825
			Ile	Asn
			Ala	Arg
			Asp 830	Leu
			Ile	
Cys	Ala	Gln 835	Lys	Phe
			Asn	Gly
			Leu	Thr 840
			Val	Leu
			Pro	Pro 845
			Leu	Leu
			Thr	
Asp	Asp 850	Met	Ile	Ala
			Ala	Tyr 855
			Thr	Ala
			Ala	Leu
			Val 860	Ser
			Gly	Thr
			Ala	
Thr 865	Ala	Gly	Trp	Thr
			Phe 870	Gly
			Ala	Gly
			Ala 875	Leu
			Gln	Ile
			Pro	Phe 880
Ala	Met	Gln	Met	Ala 885
			Tyr	Arg
			Phe	Asn
			Gly 890	Ile
			Gly	Val
			Thr	Gln 895
			Asn	Lys
			Ala	
Val	Leu	Tyr	Glu 900	Asn
			Gln	Lys
			Gln	Ile 905
			Ala	Asn
			Gln	Phe
			Asn 910	Lys
			Ala	
Ile	Ser	Gln 915	Ile	Gln
			Glu	Ser
			Leu 920	Thr
			Thr	Thr
			Ser	Thr 925
			Ala	Leu
			Gly	
Lys	Leu	Gln	Asp	Val
			Val	Asn 935
			Gln	Asn
			Ala	Gln
			Ala 940	Leu
			Asn	Thr
			Leu	
Val	Lys	Gln	Leu	Ser
			Ser	Asn
			Phe	Gly
			Ala	Ile
			Ser	Ser
			Val	Leu
			Asn	

SEQLIST-20480.TXT

```

945                950                955                960
Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp
          965          970          975
Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln
          980          985          990
Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala
          995          1000          1005
Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe
          1010          1015          1020
Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His
          1025          1030          1035          1040
Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn
          1045          1050          1055
Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro
          1060          1065          1070
Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln
          1075          1080          1085
Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr Phe Val
          1090          1095          1100
Ser Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr Val Tyr
          1105          1110          1115          1120
Asp Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys
          1125          1130          1135
Tyr Phe Lys Asn His Thr Ser Pro Asp Val Asp Leu Gly Asp Ile Ser
          1140          1145          1150
Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu
          1155          1160          1165
Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu
          1170          1175          1180
Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val Trp Leu
          1185          1190          1195          1200
Gly Phe Ile Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile Leu Leu
          1205          1210          1215
Cys Cys Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys Ser Cys
          1220          1225          1230
Gly Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val Leu Lys
          1235          1240          1245
Gly Val Lys Leu His Tyr Thr
          1250          1255

```

```

<210> 6043
<211> 274
<212> PRT
<213> SARS coronavirus

```

SEQLIST-20480.TXT

```

<400> 6043
Met Asp Leu Phe Met Arg Phe Phe Thr Leu Gly Ser Ile Thr Ala Gln
1 5 10 15
Pro Val Lys Ile Asp Asn Ala Ser Pro Ala Ser Thr Val His Ala Thr
20 25 30
Ala Thr Ile Pro Leu Gln Ala Ser Leu Pro Phe Gly Trp Leu Val Ile
35 40 45
Gly Val Ala Phe Leu Ala Val Phe Gln Ser Ala Thr Lys Ile Ile Ala
50 55 60
Leu Asn Lys Arg Trp Gln Leu Ala Leu Tyr Lys Gly Phe Gln Phe Ile
65 70 75 80
Cys Asn Leu Leu Leu Leu Phe Val Thr Ile Tyr Ser His Leu Leu Leu
85 90 95
Val Ala Ala Gly Met Glu Ala Gln Phe Leu Tyr Leu Tyr Ala Leu Ile
100 105 110
Tyr Phe Leu Gln Cys Ile Asn Ala Cys Arg Ile Ile Met Arg Cys Trp
115 120 125
Leu Cys Trp Lys Cys Lys Ser Lys Asn Pro Leu Leu Tyr Asp Ala Asn
130 135 140
Tyr Phe Val Cys Trp His Thr His Asn Tyr Asp Tyr Cys Ile Pro Tyr
145 150 155 160
Asn Ser Val Thr Asp Thr Ile Val Val Thr Glu Gly Asp Gly Ile Ser
165 170 175
Thr Pro Lys Leu Lys Glu Asp Tyr Gln Ile Gly Gly Tyr Ser Glu Asp
180 185 190
Arg His Ser Gly Val Lys Asp Tyr Val Val Val His Gly Tyr Phe Thr
195 200 205
Glu Val Tyr Tyr Gln Leu Glu Ser Thr Gln Ile Thr Thr Asp Thr Gly
210 215 220
Ile Glu Asn Ala Thr Phe Phe Ile Phe Asn Lys Leu Val Lys Asp Pro
225 230 235 240
Pro Asn Val Gln Ile His Thr Ile Asp Gly Ser Ser Gly Val Ala Asn
245 250 255
Pro Ala Met Asp Pro Ile Tyr Asp Glu Pro Thr Thr Thr Thr Ser Val
260 265 270
Pro Leu

```

```

<210> 6044
<211> 154
<212> PRT
<213> SARS coronavirus

```

```

<400> 6044
Met Met Pro Thr Thr Leu Phe Ala Gly Thr His Ile Thr Met Thr Thr
Page 1100

```

SEQLIST-20480.TXT

1 5 10 15
 Val Tyr His Ile Thr Val Ser Gln Ile Gln Leu Ser Leu Leu Lys Val
 20 25 30
 Thr Ala Phe Gln His Gln Asn Ser Lys Lys Thr Thr Lys Leu Val Val
 35 40 45
 Ile Leu Arg Ile Gly Thr Gln Val Leu Lys Thr Met Ser Leu Tyr Met
 50 55 60
 Ala Ile Ser Pro Lys Phe Thr Thr Ser Leu Ser Leu His Lys Leu Leu
 65 70 75 80
 Gln Thr Leu Val Leu Lys Met Leu His Ser Ser Ser Leu Thr Ser Leu
 85 90 95
 Leu Lys Thr His Arg Met Cys Lys Tyr Thr Gln Ser Thr Ala Leu Gln
 100 105 110
 Glu Leu Leu Ile Gln Gln Trp Ile Gln Phe Met Met Ser Arg Arg Arg
 115 120 125
 Leu Leu Ala Cys Leu Cys Lys His Lys Lys Val Ser Thr Asn Leu Cys
 130 135 140
 Thr His Ser Phe Arg Lys Lys Gln Val Arg
 145 150

<210> 6045
 <211> 76
 <212> PRT
 <213> SARS coronavirus

<400> 6045
 Met Tyr Ser Phe Val Ser Glu Glu Thr Gly Thr Leu Ile Val Asn Ser
 1 5 10 15
 Val Leu Leu Phe Leu Ala Phe Val Val Phe Leu Leu Val Thr Leu Ala
 20 25 30
 Ile Leu Thr Ala Leu Arg Leu Cys Ala Tyr Cys Cys Asn Ile Val Asn
 35 40 45
 Val Ser Leu Val Lys Pro Thr Val Tyr Val Tyr Ser Arg Val Lys Asn
 50 55 60
 Leu Asn Ser Ser Glu Gly Val Pro Asp Leu Leu Val
 65 70 75

<210> 6046
 <211> 221
 <212> PRT
 <213> SARS coronavirus

<400> 6046
 Met Ala Asp Asn Gly Thr Ile Thr Val Glu Glu Leu Lys Gln Leu Leu
 1 5 10 15
 Glu Gln Trp Asn Leu Val Ile Gly Phe Leu Phe Leu Ala Trp Ile Met
 20 25 30
 Leu Leu Gln Phe Ala Tyr Ser Asn Arg Asn Arg Phe Leu Tyr Ile Ile

SEQLIST-20480.TXT

35 40 45
 Lys Leu Val Phe Leu Trp Leu Leu Trp Pro Val Thr Leu Ala Cys Phe
 50 55 60
 Val Leu Ala Ala Val Tyr Arg Ile Asn Trp Val Thr Gly Gly Ile Ala
 65 70 75 80
 Ile Ala Met Ala Cys Ile Val Gly Leu Met Trp Leu Ser Tyr Phe Val
 85 90 95
 Ala Ser Phe Arg Leu Phe Ala Arg Thr Arg Ser Met Trp Ser Phe Asn
 100 105 110
 Pro Glu Thr Asn Ile Leu Leu Asn Val Pro Leu Arg Gly Thr Ile Val
 115 120 125
 Thr Arg Pro Leu Met Glu Ser Glu Leu Val Ile Gly Ala Val Ile Ile
 130 135 140
 Arg Gly His Leu Arg Met Ala Gly His Ser Leu Gly Arg Cys Asp Ile
 145 150 155 160
 Lys Asp Leu Pro Lys Glu Ile Thr Val Ala Thr Ser Arg Thr Leu Ser
 165 170 175
 Tyr Tyr Lys Leu Gly Ala Ser Gln Arg Val Gly Thr Asp Ser Gly Phe
 180 185 190
 Ala Ala Tyr Asn Arg Tyr Arg Ile Gly Asn Tyr Lys Leu Asn Thr Asp
 195 200 205
 His Ala Gly Ser Asn Asp Asn Ile Ala Leu Leu Val Gln
 210 215 220

<210> 6047
 <211> 63
 <212> PRT
 <213> SARS coronavirus

<400> 6047
 Met Phe His Leu Val Asp Phe Gln Val Thr Ile Ala Glu Ile Leu Ile
 1 5 10 15
 Ile Ile Met Arg Thr Phe Arg Ile Ala Ile Trp Asn Leu Asp Val Ile
 20 25 30
 Ile Ser Ser Ile Val Arg Gln Leu Phe Lys Pro Leu Thr Lys Lys Asn
 35 40 45
 Tyr Ser Glu Leu Asp Asp Glu Glu Pro Met Glu Leu Asp Tyr Pro
 50 55 60

<210> 6048
 <211> 122
 <212> PRT
 <213> SARS coronavirus

<400> 6048
 Met Lys Ile Ile Leu Phe Leu Thr Leu Ile Val Phe Thr Ser Cys Glu
 1 5 10 15
 Leu Tyr His Tyr Gln Glu Cys Val Arg Gly Thr Thr Val Leu Leu Lys

SEQLIST-20480.TXT

20 25 30
 Glu Pro Cys Pro Ser Gly Thr Tyr Glu Gly Asn Ser Pro Phe His Pro
 35 40 45
 Leu Ala Asp Asn Lys Phe Ala Leu Thr Cys Thr Ser Thr His Phe Ala
 50 55 60
 Phe Ala Cys Ala Asp Gly Thr Arg His Thr Tyr Gln Leu Arg Ala Arg
 65 70 75 80
 Ser Val Ser Pro Lys Leu Phe Ile Arg Gln Glu Glu Val Gln Gln Glu
 85 90 95
 Leu Tyr Ser Pro Leu Phe Leu Ile Val Ala Ala Leu Val Phe Leu Ile
 100 105 110
 Leu Cys Phe Thr Ile Lys Arg Lys Thr Glu
 115 120

<210> 6049
 <211> 44
 <212> PRT
 <213> SARS coronavirus

<400> 6049
 Met Asn Glu Leu Thr Leu Ile Asp Phe Tyr Leu Cys Phe Leu Ala Phe
 1 5 10 15
 Leu Leu Phe Leu Val Leu Ile Met Leu Ile Ile Phe Trp Phe Ser Leu
 20 25 30
 Glu Ile Gln Asp Leu Glu Glu Pro Cys Thr Lys Val
 35 40

<210> 6050
 <211> 84
 <212> PRT
 <213> SARS coronavirus

<400> 6050
 Met Cys Leu Lys Ile Leu Val Arg Tyr Asn Thr Arg Gly Asn Thr Tyr
 1 5 10 15
 Ser Thr Ala Trp Leu Cys Ala Leu Gly Lys Val Leu Pro Phe His Arg
 20 25 30
 Trp His Thr Met Val Gln Thr Cys Thr Pro Asn Val Thr Ile Asn Cys
 35 40 45
 Gln Asp Pro Ala Gly Gly Ala Leu Ile Ala Arg Cys Trp Tyr Leu His
 50 55 60
 Glu Gly His Gln Thr Ala Ala Phe Arg Asp Val Leu Val Val Leu Asn
 65 70 75 80
 Lys Arg Thr Asn

<210> 6051
 <211> 399
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

```

<400> 6051
Met Ser Asp Asn Gly Pro Gln Ser Asn Gln Arg Ser Ala Pro Arg Ile
1      5      10      15
Thr Phe Gly Gly Pro Thr Asp Ser Thr Asp Asn Asn Gln Asn Gly Gly
20      25      30
Arg Asn Gly Ala Arg Pro Lys Gln Arg Arg Pro Gln Gly Leu Pro Asn
35      40      45
Asn Thr Ala Ser Trp Phe Thr Ala Leu Thr Gln His Gly Lys Glu Glu
50      55      60
Leu Arg Phe Pro Arg Gly Gln Gly Val Pro Ile Asn Thr Asn Ser Gly
65      70      75      80
Pro Asp Asp Gln Ile Gly Tyr Tyr Arg Arg Ala Thr Arg Arg Val Arg
85      90      95
Gly Gly Asp Gly Lys Met Lys Glu Leu Ser Pro Arg Trp Tyr Phe Tyr
100     105
Tyr Leu Gly Thr Gly Pro Glu Ala Ser Leu Pro Tyr Gly Ala Asn Lys
115     120     125
Glu Gly Ile Val Trp Val Ala Thr Glu Gly Ala Leu Asn Thr Pro Lys
130     135     140
Asp His Ile Gly Thr Arg Asn Pro Asn Asn Asn Ala Ala Thr Val Leu
145     150     155     160
Gln Leu Pro Gln Gly Thr Thr Leu Pro Lys Gly Phe Tyr Ala Glu Gly
165     170     175
Ser Arg Gly Gly Ser Gln Ala Ser Ser Arg Ser Ser Ser Arg Ser Arg
180     185     190
Gly Asn Ser Arg Asn Ser Thr Pro Gly Ser Ser Arg Gly Asn Ser Pro
195     200     205
Ala Arg Met Ala Ser Gly Gly Gly Glu Thr Ala Leu Ala Leu Leu Leu
210     215     220
Leu Asp Arg Leu Asn Gln Leu Glu Ser Lys Val Ser Gly Lys Gly Gln
225     230     235     240
Gln Gln Gln Gly Gln Thr Val Thr Lys Lys Ser Ala Ala Glu Ala Ser
245     250     255
Lys Lys Pro Arg Gln Lys Arg Thr Ala Thr Lys Gln Tyr Asn Val Thr
260     265     270
Gln Ala Phe Gly Arg Arg Gly Pro Glu Gln Thr Gln Gly Asn Phe Gly
275     280     285
Asp Gln Asp Leu Ile Arg Gln Gly Thr Asp Tyr Lys His Trp Pro Gln
290     295     300
Ile Ala Gln Phe Ala Pro Ser Ala Ser Ala Phe Phe Gly Met Ser Arg
305     310     315     320
Ile Gly Met Glu Val Thr Pro Ser Gly Thr Trp Leu Thr Tyr His Gly

```

SEQLIST-20480.TXT

325

330

335

Ala Ile Lys Leu Asp Asp Lys Asp Pro Gln Phe Lys Asp Asn Val Ile
 340 345 350
 Leu Leu Asn Lys His Ile Asp Ala Tyr Lys Thr Phe Pro Pro Thr Glu
 355 360 365
 Pro Lys Lys Asp Lys Lys Lys Lys Thr Asp Glu Ala Gln Pro Leu Pro
 370 375 380
 Gln Arg Gln Lys Lys Gln Pro Thr Val Thr Leu Leu Pro Ala Ala
 385 390 395

<210> 6052
 <211> 422
 <212> PRT
 <213> SARS coronavirus

<400> 6052
 Met Ser Asp Asn Gly Pro Gln Ser Asn Gln Arg Ser Ala Pro Arg Ile
 1 5 10 15
 Thr Phe Gly Gly Pro Thr Asp Ser Thr Asp Asn Asn Gln Asn Gly Gly
 20 25 30
 Arg Asn Gly Ala Arg Pro Lys Gln Arg Arg Pro Gln Gly Leu Pro Asn
 35 40 45
 Asn Thr Ala Ser Trp Phe Thr Ala Leu Thr Gln His Gly Lys Glu Glu
 50 55 60
 Leu Arg Phe Pro Arg Gly Gln Gly Val Pro Ile Asn Thr Asn Ser Gly
 65 70 75 80
 Pro Asp Asp Gln Ile Gly Tyr Tyr Arg Arg Ala Thr Arg Arg Val Arg
 85 90 95
 Gly Gly Asp Gly Lys Met Lys Glu Leu Ser Pro Arg Trp Tyr Phe Tyr
 100 105 110
 Tyr Leu Gly Thr Gly Pro Glu Ala Ser Leu Pro Tyr Gly Ala Asn Lys
 115 120 125
 Glu Gly Ile Val Trp Val Ala Thr Glu Gly Ala Leu Asn Thr Pro Lys
 130 135 140
 Asp His Ile Gly Thr Arg Asn Pro Asn Asn Asn Ala Ala Thr Val Leu
 145 150 155 160
 Gln Leu Pro Gln Gly Thr Thr Leu Pro Lys Gly Phe Tyr Ala Glu Gly
 165 170 175
 Ser Arg Gly Gly Ser Gln Ala Ser Ser Arg Ser Ser Ser Arg Ser Arg
 180 185 190
 Gly Asn Ser Arg Asn Ser Thr Pro Gly Ser Ser Arg Gly Asn Ser Pro
 195 200 205
 Ala Arg Met Ala Ser Gly Gly Gly Glu Thr Ala Leu Ala Leu Leu Leu
 210 215 220
 Leu Asp Arg Leu Asn Gln Leu Glu Ser Lys Val Ser Gly Lys Gly Gln

SEQLIST-20480.TXT

225 230 235 240
 Gln Gln Gln Gly Gln Thr Val Thr Lys Lys Ser Ala Ala Glu Ala Ser
 245 250 255
 Lys Lys Pro Arg Gln Lys Arg Thr Ala Thr Lys Gln Tyr Asn Val Thr
 260 265 270
 Gln Ala Phe Gly Arg Arg Gly Pro Glu Gln Thr Gln Gly Asn Phe Gly
 275 280 285
 Asp Gln Asp Leu Ile Arg Gln Gly Thr Asp Tyr Lys His Trp Pro Gln
 290 295 300
 Ile Ala Gln Phe Ala Pro Ser Ala Ser Ala Phe Phe Gly Met Ser Arg
 305 310 315 320
 Ile Gly Met Glu Val Thr Pro Ser Gly Thr Trp Leu Thr Tyr His Gly
 325 330 335
 Ala Ile Lys Leu Asp Asp Lys Asp Pro Gln Phe Lys Asp Asn Val Ile
 340 345 350
 Leu Leu Asn Lys His Ile Asp Ala Tyr Lys Thr Phe Pro Pro Thr Glu
 355 360 365
 Pro Lys Lys Asp Lys Lys Lys Lys Thr Asp Glu Ala Gln Pro Leu Pro
 370 375 380
 Gln Arg Gln Lys Lys Gln Pro Thr Val Thr Leu Leu Pro Ala Ala Asp
 385 390 395 400
 Met Asp Asp Phe Ser Arg Gln Leu Gln Asn Ser Met Ser Gly Ala Ser
 405 410 415
 Ala Asp Ser Thr Gln Ala
 420

<210> 6053
 <211> 1173
 <212> PRT
 <213> 229E human coronavirus

<400> 6053
 Met Phe Val Leu Leu Val Ala Tyr Ala Leu Leu His Ile Ala Gly Cys
 1 5 10 15
 Gln Thr Thr Asn Gly Leu Asn Thr Ser Tyr Ser Val Cys Asn Gly Cys
 20 25 30
 Val Gly Tyr Ser Glu Asn Val Phe Ala Val Glu Ser Gly Gly Tyr Ile
 35 40 45
 Pro Ser Asp Phe Ala Phe Asn Asn Trp Phe Leu Leu Thr Asn Thr Ser
 50 55 60
 Ser Val Val Asp Gly Val Val Arg Ser Phe Gln Pro Leu Leu Leu Asn
 65 70 75 80
 Cys Leu Trp Ser Val Ser Gly Leu Arg Phe Thr Thr Gly Phe Val Tyr
 85 90 95
 Phe Asn Gly Thr Gly Arg Gly Asp Cys Lys Gly Phe Ser Ser Asp Val

110

Page 1107

SEQLIST-20480.TXT

435		440		445	
Tyr Asn Ile Tyr Asp Val Ser Gly Val Gly Val Ile Arg Val Ser Asn	450	455	460		
Asp Thr Phe Leu Asn Gly Ile Thr Tyr Thr Ser Thr Ser Gly Asn Leu	465	470	475		480
Leu Gly Phe Lys Asp Val Thr Lys Gly Thr Ile Tyr Ser Ile Thr Pro	485	490		495	
Cys Asn Pro Pro Asp Gln Leu Val Val Tyr Gln Gln Ala Val Val Gly	500	505		510	
Ala Met Leu Ser Glu Asn Phe Thr Ser Tyr Gly Phe Ser Asn Val Val	515	520	525		
Glu Leu Pro Lys Phe Phe Tyr Ala Ser Asn Gly Thr Tyr Asn Cys Thr	530	535	540		
Asp Ala Val Leu Thr Tyr Ser Ser Phe Gly Val Cys Ala Asp Gly Ser	545	550	555		560
Ile Ile Ala Val Gln Pro Arg Asn Val Ser Tyr Asp Ser Val Ser Ala	565	570		575	
Ile Val Thr Ala Asn Leu Ser Ile Pro Ser Asn Trp Thr Thr Ser Val	580	585	590		
Gln Val Glu Tyr Leu Gln Ile Thr Ser Thr Pro Ile Val Val Asp Cys	595	600	605		
Ser Thr Tyr Val Cys Asn Gly Asn Val Arg Cys Val Glu Leu Leu Lys	610	615	620		
Gln Tyr Thr Ser Ala Cys Lys Thr Ile Glu Asp Ala Leu Arg Asn Ser	625	630	635		640
Ala Arg Leu Glu Ser Ala Asp Val Ser Glu Met Leu Thr Phe Asp Lys	645	650	655		
Lys Ala Phe Thr Leu Ala Asn Val Ser Ser Phe Gly Asp Tyr Asn Leu	660	665	670		
Ser Ser Val Ile Pro Ser Leu Pro Thr Ser Gly Ser Arg Val Ala Gly	675	680	685		
Arg Ser Ala Ile Glu Asp Ile Leu Phe Ser Lys Leu Val Thr Ser Gly	690	695	700		
Leu Gly Thr Val Asp Ala Asp Tyr Lys Lys Cys Thr Lys Gly Leu Ser	705	710	715		720
Ile Ala Asp Leu Ala Cys Ala Gln Tyr Tyr Asn Gly Ile Met Val Leu	725	730		735	
Pro Gly Val Ala Asp Ala Glu Arg Met Ala Met Tyr Thr Gly Ser Leu	740	745	750		
Ile Gly Gly Ile Ala Leu Gly Gly Leu Thr Ser Ala Val Ser Ile Pro	755	760	765		
Phe Ser Leu Ala Ile Gln Ala Arg Leu Asn Tyr Val Ala Leu Gln Thr					

SEQLIST-20480.TXT

770 775 780
 Asp Val Leu Gln Glu Asn Gln Lys Ile Leu Ala Ala Ser Phe Asn Lys
 785 790 795 800
 Ala Met Thr Asn Ile Val Asp Ala Phe Thr Gly Val Asn Asp Ala Ile
 805 810 815
 Thr Gln Thr Ser Gln Ala Leu Gln Thr Val Ala Thr Ala Leu Asn Lys
 820 825 830
 Ile Gln Asp Val Val Asn Gln Gln Gly Asn Ser Leu Asn His Leu Thr
 835 840 845
 Ser Gln Leu Arg Gln Asn Phe Gln Ala Ile Ser Ser Ser Ile Gln Ala
 850 855 860
 Ile Tyr Asp Arg Leu Asp Thr Ile Gln Ala Asp Gln Gln Val Asp Arg
 865 870 875 880
 Leu Ile Thr Gly Arg Leu Ala Ala Leu Asn Val Phe Val Ser His Thr
 885 890 895
 Leu Thr Lys Tyr Thr Glu Val Arg Ala Ser Arg Gln Leu Ala Gln Gln
 900 905 910
 Lys Val Asn Glu Cys Val Lys Ser Gln Ser Lys Arg Tyr Gly Phe Cys
 915 920 925
 Gly Asn Gly Thr His Ile Phe Ser Ile Val Asn Ala Ala Pro Glu Gly
 930 935 940
 Leu Val Phe Leu His Thr Val Leu Leu Pro Thr Gln Tyr Lys Asp Val
 945 950 955 960
 Glu Ala Trp Ser Gly Leu Cys Val Asp Gly Thr Asn Gly Tyr Val Leu
 965 970 975
 Arg Gln Pro Asn Leu Ala Leu Tyr Lys Glu Gly Asn Tyr Tyr Arg Ile
 980 985 990
 Thr Ser Arg Ile Met Phe Glu Pro Arg Ile Pro Thr Met Ala Asp Phe
 995 1000 1005
 Val Gln Ile Glu Asn Cys Asn Val Thr Phe Val Asn Ile Ser Arg Ser
 1010 1015 1020
 Glu Leu Gln Thr Ile Val Pro Glu Tyr Ile Asp Val Asn Lys Thr Leu
 1025 1030 1035 1040
 Gln Glu Leu Ser Tyr Lys Leu Pro Asn Tyr Thr Val Pro Asp Leu Val
 1045 1050 1055
 Val Glu Gln Tyr Asn Gln Thr Ile Leu Asn Leu Thr Ser Glu Ile Ser
 1060 1065 1070
 Thr Leu Glu Asn Lys Ser Ala Glu Leu Asn Tyr Thr Val Gln Lys Leu
 1075 1080 1085
 Gln Thr Leu Ile Asp Asn Ile Asn Ser Thr Leu Val Asp Leu Lys Trp
 1090 1095 1100
 Leu Asn Arg Val Glu Thr Tyr Ile Lys Trp Pro Trp Trp Val Trp Leu

SEQLIST-20480.TXT

1105 1110 1115 1120
 Cys Ile Ser Val Val Leu Ile Phe Val Val Ser Met Leu Leu Leu Cys
 1125 1130 1135
 Cys Cys Ser Thr Gly Cys Cys Gly Phe Phe Ser Cys Phe Ala Ser Ser
 1140 1145 1150
 Ile Arg Gly Cys Cys Glu Ser Thr Lys Leu Pro Tyr Tyr Asp Val Glu
 1155 1160 1165
 Lys Ile His Ile Gln
 1170

<210> 6054
 <211> 77
 <212> PRT
 <213> 229E human coronavirus

<400> 6054
 Met Phe Leu Lys Leu Val Asp Asp His Ala Leu Val Val Asn Val Leu
 1 5 10 15
 Leu Trp Cys Val Val Leu Ile Val Ile Leu Leu Val Cys Ile Thr Ile
 20 25 30
 Ile Lys Leu Ile Lys Leu Cys Phe Thr Cys His Met Phe Cys Asn Arg
 35 40 45
 Thr Val Tyr Gly Pro Ile Lys Asn Val Tyr His Ile Tyr Gln Ser Tyr
 50 55 60
 Met His Ile Asp Pro Phe Pro Lys Arg Val Ile Asp Phe
 65 70 75

<210> 6055
 <211> 225
 <212> PRT
 <213> 229E human coronavirus

<400> 6055
 Met Ser Asn Asp Asn Cys Thr Gly Asp Ile Val Thr His Leu Lys Asn
 1 5 10 15
 Trp Asn Phe Gly Trp Asn Val Ile Leu Thr Ile Phe Ile Val Ile Leu
 20 25 30
 Gln Phe Gly His Tyr Lys Tyr Ser Arg Leu Phe Tyr Gly Leu Lys Met
 35 40 45
 Leu Val Leu Trp Leu Leu Trp Pro Leu Val Leu Ala Leu Ser Ile Phe
 50 55 60
 Asp Thr Trp Ala Asn Trp Asp Ser Asn Trp Ala Phe Val Ala Phe Ser
 65 70 75 80
 Phe Phe Met Ala Val Ser Thr Leu Val Met Trp Val Met Tyr Phe Ala
 85 90 95
 Asn Ser Phe Arg Leu Phe Arg Arg Ala Arg Thr Phe Trp Ala Trp Asn
 100 105 110
 Pro Glu Val Asn Ala Ile Thr Val Thr Thr Val Leu Gly Gln Thr Tyr

SEQLIST-20480.TXT

115 120 125
Tyr Gln Pro Ile Gln Gln Ala Pro Thr Gly Ile Thr Val Thr Leu Leu
130 135 140
Ser Gly Val Leu Tyr Val Asp Gly His Arg Leu Ala Ser Gly Val Gln
145 150 155 160
Val His Asn Leu Pro Glu Tyr Met Thr Val Ala Val Pro Ser Thr Thr
165 170 175
Ile Ile Tyr Ser Arg Val Gly Arg Ser Val Asn Ser Gln Asn Ser Thr
180 185 190
Gly Trp Val Phe Tyr Val Arg Val Lys His Gly Asp Phe Ser Ala Val
195 200 205
Ser Ser Pro Met Ser Asn Met Thr Glu Asn Glu Arg Leu Leu His Phe
210 215 220

Phe
225

<210> 6056
<211> 389
<212> PRT
<213> 229E human coronavirus

<400> 6056
Met Ala Thr Val Lys Trp Ala Asp Ala Ser Glu Pro Gln Arg Gly Arg
1 5 10 15
Gln Gly Arg Ile Pro Tyr Ser Leu Tyr Ser Pro Leu Leu Val Asp Ser
20 25 30
Glu Gln Pro Trp Lys Val Ile Pro Arg Asn Leu Val Pro Ile Asn Lys
35 40 45
Lys Asp Lys Asn Lys Leu Ile Gly Tyr Trp Asn Val Gln Lys Arg Phe
50 55 60
Arg Thr Arg Lys Gly Lys Arg Val Asp Leu Ser Pro Lys Leu His Phe
65 70 75 80
Tyr Tyr Leu Gly Thr Gly Pro His Lys Asp Ala Lys Phe Arg Glu Arg
85 90 95
Val Glu Gly Val Val Trp Val Ala Val Asp Gly Ala Lys Thr Glu Pro
100 105 110
Thr Gly Tyr Gly Val Arg Arg Lys Asn Ser Glu Pro Glu Ile Pro His
115 120 125
Phe Asn Gln Lys Leu Pro Asn Gly Val Thr Val Val Glu Glu Pro Asp
130 135 140
Ser Arg Ala Pro Ser Arg Ser Gln Ser Arg Ser Gln Ser Arg Gly Arg
145 150 155 160
Gly Glu Ser Lys Pro Gln Ser Arg Asn Pro Ser Ser Asp Arg Asn His
165 170 175
Asn Ser Gln Asp Asp Ile Met Lys Ala Val Ala Ala Ala Leu Lys Ser

SEQLIST-20480.TXT

180 185 190
 Leu Gly Phe Asp Lys Pro Gln Glu Lys Asp Lys Lys Ser Ala Lys Thr
 195 200 205
 Gly Thr Pro Lys Pro Ser Arg Asn Gln Ser Pro Ala Ser Ser Gln Thr
 210 215 220
 Ser Ala Lys Ser Leu Ala Arg Ser Gln Ser Ser Glu Thr Lys Glu Gln
 225 230 235 240
 Lys His Glu Met Gln Lys Pro Arg Trp Lys Arg Gln Pro Asn Asp Asp
 245 250 255
 Val Thr Ser Asn Val Thr Gln Cys Phe Gly Pro Arg Asp Leu Asp His
 260 265 270
 Asn Phe Gly Ser Ala Gly Val Val Ala Asn Gly Val Lys Ala Lys Gly
 275 280 285
 Tyr Pro Gln Phe Ala Glu Leu Val Pro Ser Thr Ala Ala Met Leu Phe
 290 295 300
 Asp Ser His Ile Val Ser Lys Glu Ser Gly Asn Thr Val Val Leu Thr
 305 310 315 320
 Phe Thr Thr Arg Val Thr Val Pro Lys Asp His Pro His Leu Gly Lys
 325 330 335
 Phe Leu Glu Glu Leu Asn Ala Phe Thr Arg Glu Met Gln Gln His Pro
 340 345 350
 Leu Leu Asn Pro Ser Ala Leu Glu Phe Asn Pro Ser Gln Thr Ser Pro
 355 360 365
 Ala Thr Ala Glu Pro Val Arg Asp Glu Val Ser Ile Glu Thr Asp Ile
 370 375 380
 Ile Asp Glu Val Asn
 385

<210> 6057
 <211> 1447
 <212> PRT
 <213> Transmissible gastroenteritis virus

<400> 6057

Met Lys Lys Leu Phe Val Val Leu Val Val Met Pro Leu Ile Tyr Gly
 1 5 10 15
 Asp Asn Phe Pro Cys Ser Lys Leu Thr Asn Arg Thr Ile Gly Asn Gln
 20 25 30
 Trp Asn Leu Ile Glu Thr Phe Leu Leu Asn Tyr Ser Ser Arg Leu Pro
 35 40 45
 Pro Asn Ser Asp Val Val Leu Gly Asp Tyr Phe Pro Thr Val Gln Pro
 50 55 60
 Trp Phe Asn Cys Ile Arg Asn Asp Ser Asn Asp Leu Tyr Val Thr Leu
 65 70 75 80
 Glu Asn Leu Lys Ala Leu Tyr Trp Asp Tyr Ala Thr Glu Asn Ile Thr

SEQLIST-20480.TXT

85

90

95

Trp	Asn	His	Arg 100	Gln	Arg	Leu	Asn	Val 105	Val	Val	Asn	Gly	Tyr 110	Pro	Tyr
Ser	Ile	Thr 115	Val	Thr	Thr	Thr	Arg 120	Asn	Phe	Asn	Ser	Ala 125	Glu	Gly	Ala
Ile	Ile 130	Cys	Ile	Cys	Lys	Gly 135	Ser	Pro	Pro	Thr	Thr 140	Thr	Thr	Glu	Ser
Ser 145	Leu	Thr	Cys	Asn	Trp 150	Gly	Ser	Glu	Cys	Arg 155	Leu	Asn	His	Lys	Phe 160
Pro	Ile	Cys	Pro	Ser 165	Asn	Ser	Glu	Ala	Asn 170	Cys	Gly	Asn	Met	Leu 175	Tyr
Gly	Leu	Gln	Trp 180	Phe	Ala	Asp	Glu	Val 185	Val	Ala	Tyr	Leu	His 190	Gly	Ala
Ser	Tyr	Arg 195	Ile	Ser	Phe	Glu	Asn 200	Gln	Trp	Ser	Gly	Thr 205	Val	Thr	Phe
Gly	Asp 210	Met	Arg	Ala	Thr	Thr 215	Leu	Glu	Val	Ala	Gly 220	Thr	Leu	Val	Asp
Leu 225	Trp	Trp	Phe	Asn	Pro 230	Val	Tyr	Asp	Val	Ser 235	Tyr	Tyr	Arg	Val	Asn 240
Asn	Lys	Asn	Gly	Thr 245	Thr	Val	Val	Ser	Asn 250	Cys	Thr	Asp	Gln	Cys 255	Ala
Ser	Tyr	Val	Ala 260	Asn	Val	Phe	Thr	Thr 265	Gln	Pro	Gly	Gly	Phe 270	Ile	Pro
Ser	Asp	Phe 275	Ser	Phe	Asn	Asn	Trp 280	Phe	Leu	Leu	Thr	Asn 285	Ser	Ser	Thr
Leu	Val 290	Ser	Gly	Lys	Leu	Val 295	Thr	Lys	Gln	Pro	Leu 300	Leu	Val	Asn	Cys
Leu 305	Trp	Pro	Val	Pro	Ser 310	Phe	Glu	Glu	Ala	Ala 315	Ser	Thr	Phe	Cys	Phe 320
Glu	Gly	Ala	Gly	Phe 325	Asp	Gln	Cys	Asn	Gly 330	Ala	Val	Leu	Asn	Asn 335	Thr
Val	Asp	Val	Ile 340	Arg	Phe	Asn	Leu	Asn 345	Phe	Thr	Thr	Asn	Val 350	Gln	Ser
Gly	Lys	Gly 355	Ala	Thr	Val	Phe	Ser 360	Leu	Asn	Thr	Thr	Gly 365	Gly	Val	Thr
Leu	Glu 370	Ile	Ser	Cys	Tyr	Thr 375	Val	Ser	Asp	Ser	Ser 380	Phe	Phe	Ser	Tyr
Gly 385	Glu	Ile	Pro	Phe	Gly 390	Val	Thr	Asp	Gly	Pro 395	Arg	Tyr	Cys	Tyr	Val 400
His	Tyr	Asn	Gly	Thr 405	Ala	Leu	Lys	Tyr	Leu 410	Gly	Thr	Leu	Pro	Pro 415	Ser
Val	Lys	Glu	Ile	Ala	Ile	Ser	Lys	Trp	Gly	His	Phe	Tyr	Ile	Asn	Gly

SEQLIST-20480.TXT

420		425		430											
Tyr	Asn	Phe	Phe	Ser	Thr	Phe	Pro	Ile	Asp	Cys	Ile	Ser	Phe	Asn	Leu
		435					440					445			
Thr	Thr	Gly	Asp	Ser	Asp	Val	Phe	Trp	Thr	Ile	Ala	Tyr	Thr	Ser	Tyr
	450					455					460				
Thr	Glu	Ala	Leu	Val	Gln	Val	Glu	Asn	Thr	Ala	Ile	Thr	Lys	Val	Thr
465					470					475					480
Tyr	Cys	Asn	Ser	His	Val	Asn	Asn	Ile	Lys	Cys	Ser	Gln	Ile	Thr	Ala
				485					490					495	
Asn	Leu	Asn	Asn	Gly	Phe	Tyr	Pro	Val	Ser	Ser	Ser	Glu	Val	Gly	Leu
			500					505					510		
Val	Asn	Lys	Ser	Val	Val	Leu	Leu	Pro	Ser	Phe	Tyr	Thr	His	Thr	Ile
		515					520					525			
Val	Asn	Ile	Thr	Ile	Gly	Leu	Gly	Met	Lys	Arg	Ser	Gly	Tyr	Gly	Gln
	530					535					540				
Pro	Ile	Ala	Ser	Thr	Leu	Ser	Asn	Ile	Thr	Leu	Pro	Met	Gln	Asp	His
545					550					555					560
Asn	Thr	Asp	Val	Tyr	Cys	Ile	Arg	Ser	Asp	Gln	Phe	Ser	Val	Tyr	Val
				565					570					575	
His	Ser	Thr	Cys	Lys	Ser	Ala	Leu	Trp	Asp	Asn	Ile	Phe	Lys	Arg	Asn
			580					585					590		
Cys	Thr	Asp	Val	Leu	Asp	Ala	Thr	Ala	Val	Ile	Lys	Thr	Gly	Thr	Cys
		595					600					605			
Pro	Phe	Ser	Phe	Asp	Lys	Leu	Asn	Asn	Tyr	Leu	Thr	Phe	Asn	Lys	Phe
	610					615					620				
Cys	Leu	Ser	Leu	Ser	Pro	Val	Gly	Ala	Asn	Cys	Lys	Phe	Asp	Val	Ala
625					630					635					640
Ala	Arg	Thr	Arg	Thr	Asn	Glu	Gln	Val	Val	Arg	Ser	Leu	Tyr	Val	Ile
				645					650					655	
Tyr	Glu	Glu	Gly	Asp	Asn	Ile	Val	Gly	Val	Pro	Ser	Asp	Asn	Ser	Gly
			660					665					670		
Val	His	Asp	Leu	Ser	Val	Leu	His	Leu	Asp	Ser	Cys	Thr	Asp	Tyr	Asn
		675					680					685			
Ile	Tyr	Gly	Arg	Thr	Gly	Val	Gly	Ile	Ile	Arg	Gln	Thr	Asn	Arg	Thr
	690					695					700				
Leu	Leu	Ser	Gly	Leu	Tyr	Tyr	Thr	Ser	Leu	Ser	Gly	Asp	Leu	Leu	Gly
705					710					715					720
Phe	Lys	Asn	Val	Ser	Asp	Gly	Val	Ile	Tyr	Ser	Val	Thr	Pro	Cys	Asp
				725					730					735	
Val	Ser	Ala	Gln	Ala	Ala	Val	Ile	Asp	Gly	Thr	Ile	Val	Gly	Ala	Ile
			740					745					750		
Thr	Ser	Ile	Asn	Ser	Glu	Leu	Leu	Gly	Leu	Thr	His	Trp	Thr	Thr	Thr

SEQLIST-20480.TXT

755	760	765																	
Pro	Asn	Phe	Tyr	Tyr	Tyr	Ser	Ile	Tyr	Asn	Tyr	Thr	Asn	Asp	Arg	Thr				
	770					775					780								
Arg	Gly	Thr	Ala	Ile	Asp	Ser	Asn	Asp	Val	Asp	Cys	Glu	Pro	Val	Ile				
785					790					795					800				
Thr	Tyr	Ser	Asn	Ile	Gly	Val	Cys	Lys	Asn	Gly	Ala	Phe	Val	Phe	Ile				
				805					810					815					
Asn	Val	Thr	His	Ser	Asp	Gly	Asp	Val	Gln	Pro	Ile	Ser	Thr	Gly	Asn				
			820					825					830						
Val	Thr	Ile	Pro	Thr	Asn	Phe	Thr	Ile	Ser	Val	Gln	Val	Glu	Tyr	Ile				
		835					840					845							
Gln	Val	Tyr	Thr	Thr	Pro	Val	Ser	Ile	Asp	Cys	Ser	Arg	Tyr	Val	Cys				
	850					855					860								
Asn	Gly	Asn	Pro	Arg	Cys	Asn	Lys	Leu	Leu	Thr	Gln	Tyr	Val	Ser	Ala				
865					870					875					880				
Cys	Gln	Thr	Ile	Glu	Gln	Ala	Leu	Ala	Met	Gly	Ala	Arg	Leu	Glu	Asn				
				885					890					895					
Met	Glu	Val	Asp	Ser	Met	Leu	Phe	Val	Ser	Glu	Asn	Ala	Leu	Lys	Leu				
			900					905					910						
Ala	Ser	Val	Glu	Ala	Phe	Asn	Ser	Ser	Glu	Thr	Leu	Asp	Pro	Ile	Tyr				
		915					920					925							
Lys	Glu	Trp	Pro	Asn	Ile	Gly	Gly	Ser	Trp	Leu	Glu	Gly	Leu	Lys	Tyr				
	930					935					940								
Ile	Leu	Pro	Ser	His	Asn	Ser	Lys	Arg	Lys	Tyr	Arg	Ser	Ala	Ile	Glu				
945					950					955					960				
Asp	Leu	Leu	Phe	Asp	Lys	Val	Val	Thr	Ser	Gly	Leu	Gly	Thr	Val	Asp				
				965					970					975					
Glu	Asp	Tyr	Lys	Arg	Cys	Thr	Gly	Gly	Tyr	Asp	Ile	Ala	Asp	Leu	Val				
			980					985					990						
Cys	Ala	Gln	Tyr	Tyr	Asn	Gly	Ile	Met	Val	Leu	Pro	Gly	Val	Ala	Asn				
		995					1000					1005							
Ala	Asp	Lys	Met	Thr	Met	Tyr	Thr	Ala	Ser	Leu	Ala	Gly	Gly	Ile	Thr				
	1010					1015					1020								
Leu	Gly	Ala	Leu	Gly	Gly	Gly	Ala	Val	Ala	Ile	Pro	Phe	Ala	Val	Ala				
1025					1030					1035					1040				
Val	Gln	Ala	Arg	Leu	Asn	Tyr	Val	Ala	Leu	Gln	Thr	Asp	Val	Leu	Asn				
				1045					1050					1055					
Lys	Asn	Gln	Gln	Ile	Leu	Ala	Ser	Ala	Phe	Asn	Gln	Ala	Ile	Gly	Asn				
			1060					1065					1070						
Ile	Thr	Gln	Ser	Phe	Gly	Lys	Val	Asn	Asp	Ala	Ile	His	Gln	Thr	Ser				
		1075					1080					1085							
Arg	Gly	Leu	Ala	Thr	Val	Ala	Lys	Ala	Leu	Ala	Lys	Val	Gln	Asp	Val				

SEQLIST-20480.TXT

1090	1095	1100
Val Asn Ile Gln Gly Gln Ala Leu Ser His Leu Thr Val Gln Leu Gln 1105 1110 1115 1120		
Asn Asn Phe Gln Ala Ile Ser Ser Ser Ile Ser Asp Ile Tyr Asn Arg 1125 1130 1135		
Leu Asp Glu Leu Ser Ala Asp Ala Gln Val Asp Arg Leu Ile Thr Gly 1140 1145 1150		
Arg Leu Thr Ala Leu Asn Ala Phe Val Ser Gln Thr Leu Thr Arg Gln 1155 1160 1165		
Ala Glu Val Arg Ala Ser Arg Gln Leu Ala Lys Asp Lys Val Asn Glu 1170 1175 1180		
Cys Val Arg Ser Gln Ser Gln Arg Phe Gly Phe Cys Gly Asn Gly Thr 1185 1190 1195 1200		
His Leu Phe Ser Leu Ala Asn Ala Ala Pro Asn Gly Met Ile Phe Phe 1205 1210 1215		
His Thr Val Leu Leu Pro Thr Ala Tyr Glu Thr Val Thr Ala Trp Pro 1220 1225 1230		
Gly Ile Cys Ala Ser Asp Gly Asp Arg Thr Phe Gly Leu Val Val Lys 1235 1240 1245		
Asp Val Gln Leu Thr Leu Phe Arg Asn Leu Asp Asp Lys Phe Tyr Leu 1250 1255 1260		
Thr Pro Arg Thr Met Tyr Gln Pro Arg Val Ala Thr Ser Ser Asp Phe 1265 1270 1275 1280		
Val Gln Ile Glu Gly Cys Asp Val Leu Phe Val Asn Ala Thr Val Ser 1285 1290 1295		
Asp Leu Pro Ser Ile Ile Pro Asp Tyr Ile Asp Ile Asn Gln Thr Val 1300 1305 1310		
Gln Asp Ile Leu Glu Asn Phe Arg Pro Asn Trp Thr Val Pro Glu Leu 1315 1320 1325		
Thr Phe Asp Ile Phe Asn Ala Thr Tyr Leu Asn Leu Thr Gly Glu Ile 1330 1335 1340		
Asp Asp Leu Glu Phe Arg Ser Glu Lys Leu His Asn Thr Thr Val Glu 1345 1350 1355 1360		
Leu Ala Ile Leu Ile Asp Asn Ile Asn Asn Thr Leu Val Asn Leu Glu 1365 1370 1375		
Trp Leu Asn Arg Ile Glu Thr Tyr Val Lys Trp Pro Trp Tyr Val Trp 1380 1385 1390		
Leu Leu Ile Gly Leu Val Val Ile Phe Cys Ile Pro Leu Leu Leu Phe 1395 1400 1405		
Cys Cys Cys Ser Thr Gly Cys Cys Gly Cys Ile Gly Cys Leu Gly Ser 1410 1415 1420		
Cys Cys His Ser Ile Cys Ser Arg Arg Gln Phe Glu Asn Tyr Glu Pro		

1425 1430 1435 1440

Ile Glu Lys Val His Val His
1445

<210> 6058
<211> 82
<212> PRT
<213> Transmissible gastroenteritis virus

<400> 6058
Met Thr Phe Pro Arg Ala Leu Thr Val Ile Asp Asp Asn Gly Met Val
1 5 10 15
Ile Asn Ile Ile Phe Trp Phe Leu Leu Ile Ile Ile Leu Ile Leu Leu
20 25 30
Ser Ile Ala Leu Leu Asn Ile Ile Lys Leu Cys Met Val Cys Cys Asn
35 40 45
Leu Gly Arg Thr Val Ile Ile Val Pro Ala Gln His Ala Tyr Asp Ala
50 55 60
Tyr Lys Asn Phe Met Arg Ile Lys Ala Tyr Asn Pro Asp Gly Ala Leu
65 70 75 80
Leu Ala

<210> 6059
<211> 262
<212> PRT
<213> Transmissible gastroenteritis virus

<400> 6059
Met Lys Ile Leu Leu Ile Leu Ala Cys Val Ile Ala Cys Ala Cys Gly
1 5 10 15
Glu Arg Tyr Cys Ala Met Lys Ser Asp Thr Asp Leu Ser Cys Arg Asn
20 25 30
Ser Thr Ala Ser Asp Cys Glu Ser Cys Phe Asn Gly Gly Asp Leu Ile
35 40 45
Trp His Leu Ala Asn Trp Asn Phe Ser Trp Ser Ile Ile Leu Ile Val
50 55 60
Phe Ile Thr Val Leu Gln Tyr Gly Arg Pro Gln Phe Ser Trp Phe Val
65 70 75 80
Tyr Gly Ile Lys Met Leu Ile Met Trp Leu Leu Trp Pro Val Val Leu
85 90 95
Ala Leu Thr Ile Phe Asn Ala Tyr Ser Glu Tyr Gln Val Ser Arg Tyr
100 105 110
Val Met Phe Gly Phe Ser Ile Ala Gly Ala Ile Val Thr Phe Val Leu
115 120 125
Trp Ile Met Tyr Phe Val Arg Ser Ile Gln Leu Tyr Arg Arg Thr Lys
130 135 140
Ser Trp Trp Ser Phe Asn Pro Glu Thr Lys Ala Ile Leu Cys Val Ser

145					150					155					160
Ala	Leu	Gly	Arg	Ser ₁₆₅	Tyr	Val	Leu	Pro	Leu ₁₇₀	Glu	Gly	Val	Pro	Thr ₁₇₅	Gly
Val	Thr	Leu	Thr ₁₈₀	Leu	Leu	Ser	Gly	Asn ₁₈₅	Leu	Tyr	Ala	Glu	Gly ₁₉₀	Phe	Lys
Ile	Ala	Gly ₁₉₅	Gly	Met	Asn	Ile	Asp ₂₀₀	Asn	Leu	Pro	Lys	Tyr ₂₀₅	Val	Met	Val
Ala	Leu ₂₁₀	Pro	Ser	Arg	Thr	Ile ₂₁₅	Val	Tyr	Thr	Leu	Val ₂₂₀	Gly	Lys	Lys	Leu
Lys ₂₂₅	Ala	Ser	Ser	Ala	Thr ₂₃₀	Gly	Trp	Ala	Tyr	Tyr ₂₃₅	Val	Lys	Ser	Lys	Ala ₂₄₀
Gly	Asp	Tyr	Ser	Thr ₂₄₅	Glu	Ala	Arg	Thr	Asp ₂₅₀	Asn	Leu	Ser	Glu	Gln ₂₅₅	Glu
Lys	Leu	Leu	His ₂₆₀	Met	Val										

<210>	6060
<211>	382
<212>	PRT
<213>	Transmissible gastroenteritis virus

<400> Met 1	Ala	Asn 6060	Gln	Gly 5	Gln	Arg	Val	Ser	Trp 10	Gly	Asp	Glu	Ser	Thr 15	Lys
Thr	Arg	Gly	Arg 20	Ser	Asn	Ser	Arg	Gly 25	Arg	Lys	Asn	Asn	Asn 30	Ile	Pro
Leu	Ser	Phe 35	Phe	Asn	Pro	Ile	Thr 40	Leu	Gln	Gln	Gly	Ser 45	Lys	Phe	Trp
Asn	Leu 50	Cys	Pro	Arg	Asp	Phe 55	Val	Pro	Lys	Gly	Ile 60	Gly	Asn	Arg	Asp
Gln 65	Gln	Ile	Gly	Tyr	Trp 70	Asn	Arg	Gln	Thr	Arg 75	Tyr	Arg	Met	Val	Lys 80
Gly	Gln	Arg	Lys	Glu 85	Leu	Pro	Glu	Arg	Trp 90	Phe	Phe	Tyr	Tyr	Leu 95	Gly
Thr	Gly	Pro	His 100	Ala	Asp	Ala	Lys	Phe 105	Lys	Asp	Lys	Leu	Asp 110	Gly	Val
Val	Trp	Val 115	Ala	Lys	Asp	Gly	Ala 120	Met	Asn	Lys	Pro	Thr 125	Thr	Leu	Gly
Ser	Arg 130	Gly	Ala	Asn	Asn	Glu 135	Ser	Lys	Ala	Leu	Lys 140	Phe	Asp	Gly	Lys
Val 145	Pro	Gly	Glu	Phe	Gln 150	Leu	Glu	Val	Asn	Gln 155	Ser	Arg	Asp	Asn	Ser 160
Arg	Ser	Arg	Ser	Gln 165	Ser	Arg	Ser	Arg	Ser 170	Arg	Asn	Arg	Ser	Gln 175	Ser
Arg	Gly	Arg	Gln	Gln	Phe	Asn	Asn	Lys	Lys	Asp	Asp	Ser	Val	Glu	Gln

SEQLIST-20480.TXT

180 185 190
Ala Val Leu Ala Ala Leu Lys Lys Leu Gly Val Asp Thr Glu Lys Gln
195 200 205
Gln Gln Arg Ser Arg Ser Lys Ser Lys Glu Arg Ser Asn Ser Lys Thr
210 215 220
Arg Asp Thr Thr Pro Lys Asn Glu Asn Lys His Thr Trp Lys Arg Thr
225 230 235 240
Ala Gly Lys Gly Asp Val Thr Arg Phe Tyr Gly Ala Arg Ser Ser Ser
245 250 255
Ala Asn Phe Gly Asp Thr Asp Leu Val Ala Asn Gly Ser Ser Ala Lys
260 265 270
His Tyr Pro Gln Leu Ala Glu Cys Val Pro Ser Val Ser Ser Ile Leu
275 280 285
Phe Gly Ser Tyr Trp Thr Ser Lys Glu Asp Gly Asp Gln Ile Glu Val
290 295 300
Thr Phe Thr His Lys Tyr His Leu Pro Lys Asp Asp Pro Lys Thr Gly
305 310 315 320
Gln Phe Leu Gln Gln Ile Asn Ala Tyr Ala Arg Pro Ser Glu Val Ala
325 330 335
Lys Glu Gln Arg Lys Arg Lys Ser Arg Ser Lys Ser Ala Glu Arg Ser
340 345 350
Glu Gln Asp Val Val Pro Asp Ala Leu Ile Glu Asn Tyr Thr Asp Val
355 360 365
Phe Asp Asp Thr Gln Val Glu Ile Ile Asp Glu Val Thr Asn
370 375 380

<210> 6061
<211> 1383
<212> PRT
<213> Porcine epidemic diarrhea virus

<400> 6061
Met Arg Ser Leu Ile Tyr Phe Trp Leu Leu Leu Pro Val Leu Pro Thr
1 5 10 15
Leu Ser Leu Pro Gln Asp Val Thr Arg Cys Gln Ser Thr Thr Asn Phe
20 25 30
Arg Arg Phe Phe Ser Lys Phe Asn Val Gln Ala Pro Ala Val Val Val
35 40 45
Leu Gly Gly Tyr Leu Pro Ser Met Asn Ser Ser Ser Trp Tyr Cys Gly
50 55 60
Thr Gly Ile Glu Thr Ala Ser Gly Val His Gly Ile Phe Leu Ser Tyr
65 70 75 80
Ile Asp Ser Gly Gln Gly Phe Glu Ile Gly Ile Ser Gln Glu Pro Phe
85 90 95
Asp Pro Ser Gly Tyr Gln Leu Tyr Leu His Lys Ala Thr Asn Gly Asn

SEQLIST-20480.TXT

100					105					110					
Thr	Asn	Ala	Ile	Ala	Arg	Leu	Arg	Ile	Cys	Gln	Phe	Pro	Asp	Asn	Lys
		115					120					125			
Thr	Leu	Gly	Pro	Thr	Val	Asn	Asp	Val	Thr	Thr	Gly	Arg	Asn	Cys	Leu
	130					135					140				
Phe	Asn	Lys	Ala	Ile	Pro	Ala	Tyr	Met	Arg	Asp	Gly	Lys	Asp	Ile	Val
145					150					155					160
Val	Gly	Ile	Thr	Trp	Asp	Asn	Asp	Arg	Val	Thr	Val	Phe	Ala	Asp	Lys
				165					170					175	
Ile	Tyr	His	Phe	Tyr	Leu	Lys	Asn	Asp	Trp	Ser	Arg	Val	Ala	Thr	Arg
			180					185					190		
Cys	Tyr	Asn	Arg	Arg	Ser	Cys	Ala	Met	Gln	Tyr	Val	Tyr	Thr	Pro	Thr
		195					200					205			
Tyr	Tyr	Met	Leu	Asn	Val	Thr	Ser	Ala	Gly	Glu	Asp	Gly	Ile	Tyr	Tyr
	210					215					220				
Glu	Pro	Cys	Thr	Ala	Asn	Cys	Thr	Gly	Tyr	Ala	Ala	Asn	Val	Phe	Ala
225					230					235					240
Thr	Asp	Ser	Asn	Gly	His	Ile	Pro	Glu	Gly	Phe	Ser	Phe	Asn	Asn	Trp
				245					250					255	
Phe	Leu	Leu	Ser	Asn	Asp	Ser	Thr	Leu	Leu	His	Gly	Lys	Val	Val	Ser
			260					265					270		
Asn	Gln	Pro	Leu	Leu	Val	Asn	Cys	Leu	Leu	Ala	Ile	Pro	Lys	Ile	Tyr
		275					280					285			
Gly	Leu	Gly	Gln	Phe	Phe	Ser	Phe	Asn	His	Thr	Met	Asp	Gly	Val	Cys
	290					295					300				
Asn	Gly	Ala	Ala	Val	Asp	Arg	Ala	Pro	Glu	Ala	Leu	Arg	Phe	Asn	Ile
305					310					315					320
Asn	Asp	Thr	Ser	Val	Ile	Leu	Ala	Glu	Gly	Ser	Ile	Val	Leu	His	Thr
				325					330					335	
Ala	Leu	Gly	Thr	Asn	Leu	Ser	Phe	Val	Cys	Ser	Asn	Ser	Ser	Asp	Pro
			340					345					350		
His	Leu	Ala	Ile	Phe	Ala	Ile	Pro	Leu	Gly	Ala	Thr	Glu	Val	Pro	Tyr
		355					360					365			
Tyr	Cys	Phe	Leu	Lys	Val	Asp	Thr	Tyr	Asn	Ser	Thr	Val	Tyr	Lys	Phe
	370					375					380				
Leu	Ala	Val	Leu	Pro	Pro	Thr	Val	Arg	Glu	Ile	Val	Ile	Thr	Lys	Tyr
385					390					395					400
Gly	Asp	Val	Tyr	Val	Asn	Gly	Phe	Gly	Tyr	Leu	His	Leu	Gly	Leu	Leu
				405					410					415	
Asp	Ala	Val	Thr	Ile	Asn	Phe	Thr	Gly	His	Gly	Thr	Asp	Asp	Asp	Val
			420					425					430		
Ser	Gly	Phe	Trp	Thr	Ile	Ala	Ser	Thr	Asn	Phe	Val	Asp	Ala	Leu	Ile

SEQLIST-20480.TXT

```

435                               440                               445
Glu Val Gln Gly Thr Ser Ile Gln Arg Ile Leu Tyr Cys Asp Asp Pro
450                               455                               460
Val Ser Gln Leu Lys Cys Ser Gln Val Ala Phe Asp Leu Asp Asp Gly
465                               470                               475                               480
Phe Tyr Pro Ile Ser Ser Arg Asn Leu Leu Ser His Glu Gln Pro Ile
485                               490                               495
Ser Phe Val Thr Leu Pro Ser Phe Asn Asp His Ser Phe Val Asn Ile
500                               505                               510
Thr Val Ser Ala Ala Phe Gly Gly Leu Ser Ser Ala Asn Leu Val Ala
515                               520                               525
Ser Asp Thr Thr Ile Asn Gly Phe Ser Ser Phe Cys Val Asp Thr Arg
530                               535                               540
Gln Phe Thr Ile Thr Leu Phe Tyr Asn Val Thr Asn Ser Tyr Gly Tyr
545                               550                               555                               560
Val Ser Lys Ser Gln Asp Ser Asn Cys Pro Phe Thr Leu Gln Ser Val
565                               570                               575
Asn Asp Tyr Leu Ser Phe Ser Lys Phe Cys Val Ser Thr Ser Leu Leu
580                               585                               590
Ala Gly Ala Cys Thr Ile Asp Leu Phe Gly Tyr Pro Ala Phe Gly Ser
595                               600                               605
Gly Val Lys Leu Thr Ser Leu Tyr Phe Gln Phe Thr Lys Gly Glu Leu
610                               615                               620
Ile Thr Gly Thr Pro Lys Pro Leu Glu Gly Ile Thr Asp Val Ser Phe
625                               630                               635                               640
Met Thr Leu Asp Val Cys Thr Lys Tyr Thr Ile Tyr Gly Phe Lys Gly
645                               650                               655
Glu Gly Ile Ile Thr Leu Thr Asn Ser Ser Ile Leu Ala Gly Val Tyr
660                               665                               670
Tyr Thr Ser Asp Ser Gly Gln Leu Leu Ala Phe Lys Asn Val Thr Ser
675                               680                               685
Gly Ala Val Tyr Ser Val Thr Pro Cys Ser Phe Ser Glu Gln Ala Ala
690                               695                               700
Tyr Val Asn Asp Asp Ile Val Gly Val Ile Ser Ser Leu Ser Asn Ser
705                               710                               715                               720
Thr Phe Asn Asn Thr Arg Glu Leu Pro Gly Phe Phe Tyr His Ser Asn
725                               730                               735
Asp Gly Ser Asn Cys Thr Glu Pro Val Leu Val Tyr Ser Asn Ile Gly
740                               745                               750
Val Cys Lys Ser Gly Ser Ile Gly Tyr Val Pro Ser Gln Tyr Gly Gln
755                               760                               765
Val Lys Ile Ala Pro Thr Val Thr Gly Asn Ile Ser Ile Pro Thr Asn

```

SEQLIST-20480.TXT

770 775 780
 Phe Ser Met Ser Ile Arg Thr Glu Tyr Leu Gln Leu Tyr Asn Thr Pro
 785 790 795 800
 Val Ser Val Asp Cys Ala Thr Tyr Val Cys Asn Gly Asn Ser Arg Cys
 805 810 815
 Lys Gln Leu Leu Thr Gln Tyr Thr Ala Ala Cys Lys Thr Ile Glu Ser
 820 825 830
 Ala Leu Gln Leu Ser Ala Arg Leu Glu Ser Val Glu Val Asn Ser Met
 835 840 845
 Leu Thr Ile Ser Glu Glu Ala Leu Gln Leu Ala Thr Ile Ser Ser Phe
 850 855 860
 Asn Gly Asp Gly Tyr Asn Phe Thr Asn Val Leu Gly Ala Ser Val Tyr
 865 870 875 880
 Asp Pro Ala Ser Gly Arg Val Val Gln Lys Arg Ser Val Ile Glu Asp
 885 890 895
 Leu Leu Phe Asn Lys Val Val Thr Asn Gly Leu Gly Thr Val Asp Glu
 900 905 910
 Asp Tyr Lys Arg Cys Ser Asn Gly Arg Ser Val Ala Asp Leu Val Cys
 915 920 925
 Ala Gln Tyr Tyr Ser Gly Val Met Val Leu Pro Gly Val Val Asp Ala
 930 935 940
 Glu Lys Leu His Met Tyr Ser Ala Ser Leu Ile Gly Gly Met Ala Leu
 945 950 955 960
 Gly Gly Ile Thr Ala Ala Ala Ala Leu Pro Phe Ser Tyr Ala Val Gln
 965 970 975
 Ala Arg Leu Asn Tyr Leu Ala Leu Gln Thr Asp Val Leu Gln Arg Asn
 980 985 990
 Gln Gln Leu Leu Ala Glu Ser Phe Asn Ser Ala Ile Gly Asn Ile Thr
 995 1000 1005
 Ser Ala Phe Glu Ser Val Lys Glu Ala Ile Ser Gln Thr Ser Lys Gly
 1010 1015 1020
 Leu Asn Thr Val Ala His Ala Leu Thr Lys Val Gln Glu Val Val Asn
 1025 1030 1035 1040
 Ser Gln Gly Ser Ala Leu Asn Gln Leu Thr Val Gln Leu Gln His Asn
 1045 1050 1055
 Phe Gln Ala Ile Ser Ser Ser Ile Asp Asp Ile Tyr Ser Arg Leu Asp
 1060 1065 1070
 Ile Leu Ser Ala Asp Val Gln Val Asp Arg Leu Ile Thr Gly Arg Leu
 1075 1080 1085
 Ser Ala Leu Asn Ala Phe Val Ala Gln Thr Leu Thr Lys Tyr Thr Glu
 1090 1095 1100
 Val Gln Ala Ser Arg Lys Leu Ala Gln Gln Lys Val Asn Glu Cys Val

SEQLIST-20480.TXT

1105 1110 1115 1120
 Lys Ser Gln Ser Gln Arg Tyr Gly Phe Cys Gly Gly Asp Gly Glu His
 1125 1130 1135
 Ile Phe Ser Leu Val Gln Ala Ala Pro Gln Gly Leu Leu Phe Leu His
 1140 1145 1150
 Thr Val Leu Val Pro Gly Asp Phe Val Asn Val Leu Ala Ile Ala Gly
 1155 1160 1165
 Leu Cys Val Asn Gly Glu Ile Ala Leu Thr Leu Arg Glu Pro Gly Leu
 1170 1175 1180
 Val Leu Phe Thr His Glu Leu Gln Thr Tyr Thr Ala Thr Glu Tyr Phe
 1185 1190 1195 1200
 Val Ser Ser Arg Arg Met Phe Glu Pro Arg Lys Pro Thr Val Ser Asp
 1205 1210 1215
 Phe Val Gln Ile Glu Ser Cys Val Val Thr Tyr Val Asn Leu Thr Ser
 1220 1225 1230
 Asp Gln Leu Pro Asp Val Ile Pro Asp Tyr Ile Asp Val Asn Lys Thr
 1235 1240 1245
 Leu Asp Glu Ile Leu Ala Ser Leu Pro Asn Arg Thr Gly Pro Ser Leu
 1250 1255 1260
 Pro Leu Asp Val Phe Asn Ala Thr Tyr Leu Asn Leu Thr Gly Glu Ile
 1265 1270 1275 1280
 Ala Asp Leu Glu Gln Arg Ser Glu Ser Leu Arg Asn Thr Thr Glu Glu
 1285 1290 1295
 Leu Arg Ser Leu Ile Asn Asn Ile Asn Asn Thr Leu Val Asp Leu Glu
 1300 1305 1310
 Trp Leu Asn Arg Val Glu Thr Tyr Ile Lys Trp Pro Trp Trp Val Trp
 1315 1320 1325
 Leu Ile Ile Val Ile Val Leu Ile Phe Val Val Ser Leu Leu Val Phe
 1330 1335 1340
 Cys Cys Ile Ser Thr Gly Cys Cys Gly Cys Cys Gly Cys Cys Gly Ala
 1345 1350 1355 1360
 Cys Phe Ser Gly Cys Cys Arg Gly Pro Arg Leu Gln Pro Tyr Glu Ala
 1365 1370 1375
 Phe Glu Lys Val His Val Gln
 1380

<210> 6062
 <211> 76
 <212> PRT
 <213> Porcine epidemic diarrhea virus

<400> 6062
 Met Leu Gln Leu Val Asn Asp Asn Gly Leu Val Val Asn Val Ile Leu
 1 5 10 15
 Trp Leu Phe Val Leu Phe Phe Leu Leu Ile Ile Ser Ile Thr Phe Val

20 25 30
 Gln Leu Val Asn Leu Cys Phe Thr Cys His Arg Leu Cys Asn Ser Ala
 35 40 45
 Val Tyr Thr Pro Ile Gly Arg Leu Tyr Arg Val Tyr Lys Ser Tyr Met
 50 55 60
 Arg Ile Asp Pro Leu Pro Ser Thr Val Ile Asp Val
 65 70 75

<210> 6063
 <211> 226
 <212> PRT
 <213> Porcine epidemic diarrhea virus

<400> 6063
 Met Ser Asn Gly Ser Ile Pro Val Asp Glu Val Ile Glu His Leu Arg
 1 5 10 15
 Asn Trp Asn Phe Thr Trp Asn Ile Ile Leu Thr Ile Leu Leu Val Val
 20 25 30
 Leu Gln Tyr Gly His Tyr Lys Tyr Ser Val Phe Leu Tyr Gly Val Lys
 35 40 45
 Met Ala Ile Leu Trp Ile Leu Trp Pro Leu Val Leu Ala Leu Ser Leu
 50 55 60
 Phe Asp Ala Trp Ala Ser Phe Gln Val Asn Trp Val Phe Phe Ala Phe
 65 70 75 80
 Ser Ile Leu Met Ala Cys Ile Thr Leu Met Leu Trp Ile Met Tyr Phe
 85 90
 Val Asn Ser Ile Arg Leu Trp Arg Arg Thr His Ser Trp Trp Ser Phe
 100 105 110
 Asn Pro Glu Thr Asp Ala Leu Leu Thr Thr Ser Val Met Gly Arg Gln
 115 120 125
 Val Cys Ile Pro Val Leu Gly Ala Pro Thr Gly Val Thr Leu Thr Leu
 130 135 140
 Leu Ser Gly Thr Leu Leu Val Glu Gly Tyr Lys Val Ala Thr Gly Val
 145 150 155 160
 Gln Val Ser Gln Leu Pro Asn Phe Val Thr Val Ala Lys Ala Thr Thr
 165 170 175
 Thr Ile Val Tyr Gly Arg Val Gly Arg Ser Val Asn Ala Ser Ser Gly
 180 185 190
 Thr Gly Trp Ala Phe Tyr Val Arg Ser Lys His Gly Asp Tyr Ser Ala
 195 200 205
 Val Ser Asn Pro Ser Ala Val Leu Thr Asp Ser Glu Lys Val Leu His
 210 215 220
 Leu Val
 225

<210> 6064

SEQLIST-20480.TXT

<211> 441
 <212> PRT
 <213> Porcine epidemic diarrhea virus

<400> 6064

```

Met Ala Ser Val Ser Phe Gln Asp Arg Gly Arg Lys Arg Val Pro Leu
1      5      10      15
Ser Leu Tyr Ala Pro Leu Arg Val Thr Asn Asp Lys Pro Leu Ser Lys
      20      25      30
Val Leu Ala Asn Asn Ala Val Pro Thr Asn Lys Gly Asn Lys Asp Gln
      35      40      45
Gln Ile Gly Tyr Trp Asn Glu Gln Ile Arg Trp Arg Met Arg Arg Gly
      50      55      60
Glu Arg Ile Glu Gln Pro Ser Asn Trp His Phe Tyr Tyr Leu Gly Thr
      65      70      75      80
Gly Pro His Gly Asp Leu Arg Tyr Arg Thr Arg Thr Glu Gly Val Phe
      85      90      95
Trp Val Ala Lys Glu Gly Ala Lys Thr Glu Pro Thr Asn Leu Gly Val
      100     105     110
Arg Lys Ala Ser Glu Lys Pro Ile Ile Pro Lys Phe Ser Gln Gln Leu
      115     120     125
Pro Ser Val Val Glu Ile Val Glu Pro Asn Thr Pro Pro Ala Ser Arg
      130     135     140
Ala Asn Ser Arg Ser Arg Ser Arg Gly Asn Gly Asn Asn Arg Ser Arg
      145     150     155     160
Ser Pro Ser Asn Asn Arg Gly Asn Asn Gln Ser Arg Gly Asn Ser Gln
      165     170     175
Asn Arg Gly Asn Asn Gln Gly Arg Gly Ala Ser Gln Asn Arg Gly Gly
      180     185     190
Asn Asn Asn Asn Asn Asn Lys Ser Arg Asn Gln Ser Asn Asn Arg Asn
      195     200     205
Gln Ser Asn Asp Arg Gly Gly Val Thr Ser Arg Asp Asp Leu Val Ala
      210     215     220
Ala Val Lys Asp Ala Leu Lys Ser Leu Gly Ile Gly Glu Asn Pro Asp
      225     230     235     240
Arg His Lys Gln Gln Gln Lys Pro Lys Gln Glu Lys Ser Asp Asn Ser
      245     250     255
Gly Lys Asn Thr Pro Lys Lys Asn Lys Ser Arg Ala Thr Ser Lys Glu
      260     265     270
Arg Asp Leu Lys Asp Ile Pro Glu Trp Arg Arg Ile Pro Lys Gly Glu
      275     280     285
Asn Ser Val Ala Ala Cys Phe Gly Pro Arg Gly Gly Phe Lys Asn Phe
      290     295     300
Gly Asp Ala Glu Phe Val Glu Lys Gly Val Asp Ala Ser Gly Tyr Ala
    
```

```

          SEQLIST-20480.TXT
305              310             315             320
```

<210>	6065
<211>	1363
<212>	PRT
<213>	Bovine coronavirus

Page 1126

SEQLIST-20480.TXT

165
 Gly Asn Gln Arg Val Glu Leu Trp His Trp Asp Thr Gly Val Val Ser
 180 185 190
 Cys Leu Tyr Lys Arg Asn Phe Thr Tyr Asp Val Asn Ala Asp Tyr Leu
 195 200 205
 Tyr Phe His Phe Tyr Gln Glu Gly Gly Thr Phe Tyr Ala Tyr Phe Thr
 210 215 220
 Asp Thr Gly Val Val Thr Lys Phe Leu Phe Asn Val Tyr Leu Gly Thr
 225 230 235 240
 Val Leu Ser His Tyr Tyr Val Met Pro Leu Thr Cys Asn Ser Ala Leu
 245 250 255
 Thr Leu Glu Tyr Trp Val Thr Pro Leu Thr Ser Lys Gln Tyr Leu Leu
 260 265 270
 Ala Phe Asn Gln Asp Gly Val Ile Phe Asn Ala Val Asp Cys Lys Ser
 275 280 285
 Asp Phe Met Ser Glu Ile Lys Cys Lys Thr Leu Ser Ile Ala Pro Ser
 290 295 300
 Thr Gly Val Tyr Glu Leu Asn Gly Tyr Thr Val Gln Pro Ile Ala Asp
 305 310 315 320
 Val Tyr Arg Arg Ile Pro Asn Leu Pro Asp Cys Asn Ile Glu Ala Trp
 325 330 335
 Leu Asn Asp Lys Ser Val Pro Ser Pro Leu Asn Trp Glu Arg Lys Thr
 340 345 350
 Phe Ser Asn Cys Asn Phe Asn Met Ser Ser Leu Met Ser Phe Ile Gln
 355 360 365
 Ala Tyr Ser Phe Thr Cys Asn Asn Ile Asp Ala Ala Lys Ile Tyr Gly
 370 375 380
 Met Cys Phe Ser Ser Ile Thr Ile Asp Lys Phe Ala Ile Pro Asn Gly
 385 390 395 400
 Arg Lys Val Asp Leu Gln Leu Gly Asn Leu Gly Tyr Leu Gln Ser Phe
 405 410 415
 Asn Tyr Arg Ile Asp Thr Thr Ala Thr Ser Cys Gln Leu Tyr Tyr Asn
 420 425 430
 Leu Pro Ala Ala Asn Val Ser Val Ser Arg Phe Asn Pro Ser Thr Trp
 435 440 445
 Asn Arg Arg Phe Gly Phe Thr Glu Gln Ser Val Phe Lys Pro Gln Pro
 450 455 460
 Ala Gly Val Phe Thr Asp His Asp Val Val Tyr Ala Gln His Cys Phe
 465 470 475 480
 Lys Ala Ser Thr Asn Phe Cys Pro Cys Lys Leu Asp Gly Ser Leu Cys
 485 490 495
 Val Gly Asn Gly Pro Gly Ile Asp Ala Gly Tyr Lys Thr Ser Gly Ile

SEQLIST-20480.TXT

500										505					510				
Gly	Thr	Cys	Pro	Ala	Gly	Thr	Asn	Tyr	Leu	Thr	Cys	His	Asn	Ala	Ala				
		515					520					525							
Gln	Cys	Asp	Cys	Leu	Cys	Thr	Pro	Asp	Pro	Ile	Thr	Ser	Lys	Ala	Thr				
	530					535					540								
Gly	Pro	Tyr	Lys	Cys	Pro	Gln	Thr	Lys	Tyr	Leu	Val	Gly	Ile	Gly	Glu				
545					550					555					560				
His	Cys	Ser	Gly	Leu	Ala	Ile	Lys	Ser	Asp	His	Cys	Gly	Gly	Asn	Pro				
				565					570					575					
Cys	Thr	Cys	Gln	Pro	Gln	Ala	Phe	Leu	Gly	Trp	Ser	Val	Asp	Ser	Cys				
			580					585					590						
Leu	Gln	Gly	Asp	Arg	Cys	Asn	Ile	Phe	Ala	Asn	Phe	Ile	Leu	His	Asp				
		595					600					605							
Val	Asn	Ser	Gly	Thr	Thr	Cys	Ser	Thr	Asp	Leu	Gln	Lys	Ser	Asn	Thr				
	610					615					620								
Asp	Ile	Ile	Leu	Gly	Val	Cys	Val	Asn	Tyr	Asp	Leu	Tyr	Gly	Ile	Thr				
625					630					635					640				
Gly	Gln	Gly	Ile	Phe	Val	Glu	Val	Asn	Ala	Thr	Tyr	Tyr	Asn	Ser	Trp				
				645					650					655					
Gln	Asn	Leu	Leu	Tyr	Asp	Ser	Asn	Gly	Asn	Leu	Tyr	Gly	Phe	Arg	Asp				
			660					665					670						
Tyr	Leu	Thr	Asn	Arg	Thr	Phe	Met	Ile	Arg	Ser	Cys	Tyr	Ser	Gly	Arg				
		675					680					685							
Val	Ser	Ala	Ala	Phe	His	Ala	Asn	Ser	Ser	Glu	Pro	Ala	Leu	Leu	Phe				
	690					695					700								
Arg	Asn	Ile	Lys	Cys	Asn	Tyr	Val	Phe	Asn	Asn	Thr	Leu	Ser	Arg	Gln				
705					710					715					720				
Leu	Gln	Pro	Ile	Asn	Tyr	Phe	Asp	Ser	Tyr	Leu	Gly	Cys	Val	Val	Asn				
				725					730					735					
Ala	Asp	Asn	Ser	Thr	Ser	Ser	Val	Val	Gln	Thr	Cys	Asp	Leu	Thr	Val				
			740					745					750						
Gly	Ser	Gly	Tyr	Cys	Val	Asp	Tyr	Ser	Thr	Lys	Arg	Arg	Ser	Arg	Arg				
		755					760					765							
Ser	Ile	Thr	Thr	Gly	Tyr	Arg	Phe	Thr	Asn	Phe	Glu	Pro	Phe	Thr	Val				
	770					775					780								
Asn	Ser	Val	Asn	Asp	Ser	Leu	Glu	Pro	Val	Gly	Gly	Leu	Tyr	Glu	Ile				
785					790					795					800				
Gln	Ile	Pro	Ser	Glu	Phe	Thr	Ile	Gly	Asn	Met	Glu	Glu	Phe	Ile	Gln				
				805					810					815					
Thr	Ser	Ser	Pro	Lys	Val	Thr	Ile	Asp	Cys	Ser	Ala	Phe	Val	Cys	Gly				
			820					825					830						
Asp	Tyr	Ala	Ala	Cys	Lys	Ser	Gln	Leu	Val	Glu	Tyr	Gly	Ser	Phe	Cys				

SEQLIST-20480.TXT

835	840	845																		
Asp	Asn	Ile	Asn	Ala	Ile	Leu	Thr	Glu	Val	Asn	Glu	Leu	Leu	Asp	Thr					
850						855					860									
Thr	Gln	Leu	Gln	Val	Ala	Asn	Ser	Leu	Met	Asn	Gly	Val	Thr	Leu	Ser					
865					870					875					880					
Thr	Lys	Leu	Lys	Asp	Gly	Val	Asn	Phe	Asn	Val	Asp	Asp	Ile	Asn	Phe					
				885					890					895						
Ser	Pro	Val	Leu	Gly	Cys	Leu	Gly	Ser	Asp	Cys	Asn	Lys	Val	Ser	Ser					
			900					905					910							
Arg	Ser	Ala	Ile	Glu	Asp	Leu	Leu	Phe	Ser	Lys	Val	Lys	Leu	Ser	Asp					
		915					920					925								
Val	Gly	Phe	Val	Glu	Ala	Tyr	Asn	Asn	Cys	Thr	Gly	Gly	Ala	Glu	Ile					
	930					935					940									
Arg	Asp	Leu	Ile	Cys	Val	Gln	Ser	Tyr	Asn	Gly	Ile	Lys	Val	Leu	Pro					
945					950					955					960					
Pro	Leu	Leu	Ser	Glu	Asn	Gln	Ile	Ser	Gly	Tyr	Thr	Leu	Ala	Ala	Thr					
				965					970					975						
Ser	Ala	Ser	Leu	Phe	Pro	Pro	Trp	Ser	Ala	Ala	Ala	Gly	Val	Pro	Phe					
			980					985					990							
Tyr	Leu	Asn	Val	Gln	Tyr	Arg	Ile	Asn	Gly	Ile	Gly	Val	Thr	Met	Asp					
		995					1000					1005								
Val	Leu	Ser	Gln	Asn	Gln	Lys	Leu	Ile	Ala	Asn	Ala	Phe	Asn	Asn	Ala					
	1010					1015					1020									
Leu	Gly	Ala	Ile	Gln	Glu	Gly	Phe	Asp	Ala	Thr	Asn	Ser	Ala	Leu	Val					
1025					1030					1035					1040					
Lys	Ile	Gln	Ala	Val	Val	Asn	Ala	Asn	Ala	Glu	Ala	Leu	Asn	Asn	Leu					
			1045						1050					1055						
Leu	Gln	Gln	Leu	Ser	Asn	Arg	Phe	Gly	Ala	Ile	Ser	Ser	Ser	Leu	Gln					
			1060					1065					1070							
Glu	Ile	Leu	Ser	Arg	Leu	Asp	Ala	Leu	Glu	Ala	Gln	Ala	Gln	Ile	Asp					
	1075						1080					1085								
Arg	Leu	Ile	Asn	Gly	Arg	Leu	Thr	Ala	Leu	Asn	Ala	Tyr	Val	Ser	Gln					
	1090					1095					1100									
Gln	Leu	Ser	Asp	Ser	Thr	Leu	Val	Lys	Phe	Ser	Ala	Ala	Gln	Ala	Met					
1105					1110					1115					1120					
Glu	Lys	Val	Asn	Glu	Cys	Val	Lys	Ser	Gln	Ser	Ser	Arg	Ile	Asn	Phe					
			1125						1130					1135						
Cys	Gly	Asn	Gly	Asn	His	Ile	Ile	Ser	Leu	Val	Gln	Asn	Ala	Pro	Tyr					
			1140					1145					1150							
Gly	Leu	Tyr	Phe	Ile	His	Phe	Ser	Tyr	Val	Pro	Thr	Lys	Tyr	Val	Thr					
	1155						1160					1165								
Ala	Lys	Val	Ser	Pro	Gly	Leu	Cys	Ile	Ala	Gly	Asp	Arg	Gly	Ile	Ala					

SEQLIST-20480.TXT

1170

1175

1180

Pro Lys Ser Gly Tyr Phe Val Asn Val Asn Asn Thr Trp Met Phe Thr
 1185 1190 1195 1200
 Gly Ser Gly Tyr Tyr Tyr Pro Glu Pro Ile Thr Gly Asn Asn Val Val
 1205 1210 1215
 Val Met Ser Thr Cys Ala Val Asn Tyr Thr Lys Ala Pro Asp Val Met
 1220 1225 1230
 Leu Asn Ile Ser Thr Pro Asn Leu Pro Tyr Phe Lys Glu Glu Leu Asp
 1235 1240 1245
 Gln Trp Phe Lys Asn Gln Thr Ser Val Ala Pro Asp Leu Ser Leu Asp
 1250 1255 1260
 Tyr Ile Asn Val Thr Phe Leu Asp Leu Gln Asp Glu Met Asn Arg Leu
 1265 1270 1275 1280
 Gln Glu Ala Ile Lys Val Leu Asn Gln Ser Tyr Ile Asn Leu Lys Asp
 1285 1290 1295
 Ile Gly Thr Tyr Glu Tyr Tyr Val Lys Trp Pro Trp Tyr Val Trp Leu
 1300 1305 1310
 Leu Ile Gly Phe Ala Gly Val Ala Met Leu Val Leu Leu Phe Phe Ile
 1315 1320 1325
 Cys Cys Cys Thr Gly Cys Gly Thr Ser Cys Phe Lys Lys Cys Gly Gly
 1330 1335 1340
 Cys Cys Asp Asp Tyr Thr Gly His Gln Glu Leu Val Ile Lys Thr Ser
 1345 1350 1355 1360

His Glu Asp

<210> 6066
 <211> 84
 <212> PRT
 <213> Bovine coronavirus

<400> 6066
 Met Phe Met Ala Asp Ala Tyr Phe Ala Asp Thr Val Trp Tyr Val Gly
 1 5 10 15
 Gln Ile Ile Phe Ile Val Ala Ile Cys Leu Leu Val Ile Ile Val Val
 20 25 30
 Val Ala Phe Leu Ala Thr Phe Lys Leu Cys Ile Gln Leu Cys Gly Met
 35 40 45
 Cys Asn Thr Leu Val Leu Ser Pro Ser Ile Tyr Val Phe Asn Arg Gly
 50 55 60
 Arg Gln Phe Tyr Glu Phe Tyr Asn Asp Val Lys Pro Pro Val Leu Asp
 65 70 75 80

Val Asp Asp Val

<210> 6067

SEQLIST-20480.TXT

<211> 230
 <212> PRT
 <213> Bovine coronavirus

<400> 6067
 Met Ser Ser Val Thr Thr Pro Ala Pro Val Tyr Thr Trp Thr Ala Asp
 1 5 10 15
 Glu Ala Ile Lys Phe Leu Lys Glu Trp Asn Phe Ser Leu Gly Ile Ile
 20 25 30
 Leu Leu Phe Ile Thr Val Ile Leu Gln Phe Gly Tyr Thr Ser Arg Ser
 35 40 45
 Met Phe Val Tyr Val Ile Lys Met Val Ile Leu Trp Leu Met Trp Pro
 50 55 60
 Leu Thr Ile Ile Leu Thr Ile Phe Asn Cys Val Tyr Ala Leu Asn Asn
 65 70 75 80
 Val Tyr Leu Gly Phe Ser Ile Val Phe Thr Ile Val Ala Ile Ile Met
 85 90 95
 Trp Ile Val Tyr Phe Val Asn Ser Ile Arg Leu Phe Ile Arg Thr Gly
 100 105 110
 Ser Trp Trp Ser Phe Asn Pro Glu Thr Asn Asn Leu Met Cys Ile Asp
 115 120 125
 Met Lys Gly Arg Met Tyr Val Arg Pro Ile Ile Glu Asp Tyr His Thr
 130 135 140
 Leu Thr Val Thr Ile Ile Arg Gly His Leu Tyr Met Gln Gly Ile Lys
 145 150 155 160
 Leu Gly Thr Gly Tyr Ser Leu Ser Asp Leu Pro Ala Tyr Val Thr Val
 165 170 175
 Ala Lys Val Ser His Leu Leu Thr Tyr Lys Arg Gly Phe Leu Asp Lys
 180 185 190
 Ile Gly Asp Thr Ser Gly Phe Ala Val Tyr Val Lys Ser Lys Val Gly
 195 200 205
 Asn Tyr Arg Leu Pro Ser Thr Gln Lys Gly Ser Gly Leu Asp Thr Ala
 210 215 220
 Leu Leu Arg Asn Asn Ile
 225 230

<210> 6068
 <211> 448
 <212> PRT
 <213> Bovine coronavirus

<400> 6068
 Met Ser Phe Thr Pro Gly Lys Gln Ser Ser Ser Arg Ala Ser Ser Gly
 1 5 10 15
 Asn Arg Ser Gly Asn Gly Ile Leu Lys Trp Ala Asp Gln Ser Asp Gln
 20 25 30
 Ser Arg Asn Val Gln Thr Arg Gly Arg Arg Ala Gln Pro Lys Gln Thr

35 40 45

Page 1132

SEQLIST-20480.TXT

```

370                               375                               380
Gly Thr Met Asn Met Ser Pro Lys Pro Gln Arg Gln Arg Gly Gln Lys
385                               390                               395                               400
Asn Gly Gln Gly Glu Asn Asp Asn Ile Ser Val Ala Ala Pro Lys Ser
405                               410                               415
Arg Val Gln Gln Asn Lys Ile Arg Glu Leu Thr Ala Glu Asp Ile Ser
420                               425                               430
Leu Leu Lys Lys Met Asp Glu Pro Phe Thr Glu Asp Thr Ser Glu Ile
435                               440                               445

<210> 6069
<211> 1324
<212> PRT
<213> Murine hepatitis virus

<400> 6069
Met Leu Phe Val Phe Ile Leu Phe Leu Pro Ser Cys Leu Gly Tyr Ile
1                               5                               10                               15
Gly Asp Phe Arg Cys Ile Gln Leu Val Asn Ser Asn Gly Ala Asn Val
20                               25                               30
Ser Ala Pro Ser Ile Ser Thr Glu Thr Val Glu Val Ser Gln Gly Leu
35                               40                               45
Gly Thr Tyr Tyr Val Leu Asp Arg Val Tyr Leu Asn Ala Thr Leu Leu
50                               55                               60
Leu Thr Gly Tyr Tyr Pro Val Asp Gly Ser Lys Phe Arg Asn Leu Ala
65                               70                               75                               80
Leu Thr Gly Thr Asn Ser Val Ser Leu Ser Trp Phe Gln Pro Pro Tyr
85                               90                               95
Leu Ser Gln Phe Asn Asp Gly Ile Phe Ala Lys Val Gln Asn Leu Lys
100                              105                              110
Thr Ser Thr Pro Ser Gly Ala Thr Ala Tyr Phe Pro Thr Ile Val Ile
115                              120                              125
Gly Ser Leu Phe Gly Tyr Thr Ser Tyr Thr Val Val Ile Glu Pro Tyr
130                              135                              140
Asn Gly Val Ile Met Ala Ser Val Cys Gln Tyr Thr Ile Cys Leu Leu
145                              150                              155                              160
Pro Tyr Thr Asp Cys Lys Pro Asn Thr Asn Gly Asn Lys Leu Ile Gly
165                              170                              175
Phe Trp His Thr Asp Val Lys Pro Pro Ile Cys Val Leu Lys Arg Asn
180                              185                              190
Phe Thr Leu Asn Val Asn Ala Asp Ala Phe Tyr Phe His Phe Tyr Gln
195                              200                              205
His Gly Gly Thr Phe Tyr Ala Tyr Tyr Ala Asp Lys Pro Ser Ala Thr
210                              215                              220

```

SEQLIST-20480.TXT

Thr Phe Leu Phe Ser Val Tyr Ile Gly Asp Ile Leu Thr Gln Tyr Tyr
 225 230 235 240
 Val Leu Pro Phe Ile Cys Asn Pro Thr Ala Gly Ser Thr Phe Ala Pro
 245 250 255
 Arg Tyr Trp Val Thr Pro Leu Val Lys Arg Gln Tyr Leu Phe Asn Phe
 260 265 270
 Asn Gln Lys Gly Val Ile Thr Ser Ala Val Asp Cys Ala Ser Ser Tyr
 275 280 285
 Thr Ser Glu Ile Lys Cys Lys Thr Gln Ser Met Leu Pro Ser Thr Gly
 290 295 300
 Val Tyr Glu Leu Ser Gly Tyr Thr Val Gln Pro Val Gly Val Val Tyr
 305 310 315 320
 Arg Arg Val Ala Asn Leu Pro Ala Cys Asn Ile Glu Glu Trp Leu Thr
 325 330 335
 Ala Arg Ser Val Pro Ser Pro Leu Asn Trp Glu Arg Lys Thr Phe Gln
 340 345 350
 Asn Cys Asn Phe Asn Leu Ser Ser Leu Leu Arg Tyr Val Gln Ala Glu
 355 360 365
 Ser Leu Phe Cys Asn Asn Ile Asp Ala Ser Lys Val Tyr Gly Arg Cys
 370 375 380
 Phe Gly Ser Ile Ser Val Asp Lys Phe Ala Val Pro Arg Ser Arg Gln
 385 390 395 400
 Val Asp Leu Gln Leu Gly Asn Ser Gly Phe Leu Gln Thr Ala Asn Tyr
 405 410 415
 Lys Ile Asp Thr Ala Ala Thr Ser Cys Gln Leu His Tyr Thr Leu Pro
 420 425 430
 Lys Asn Asn Val Thr Ile Asn Asn His Asn Pro Ser Ser Trp Asn Arg
 435 440 445
 Arg Tyr Gly Phe Asn Asp Ala Gly Val Phe Gly Lys Asn Gln His Asp
 450 455 460
 Val Val Tyr Ala Gln Gln Cys Phe Thr Val Arg Ser Ser Tyr Cys Pro
 465 470 475 480
 Cys Ala Gln Pro Asp Ile Val Ser Pro Cys Thr Thr Gln Thr Lys Pro
 485 490 495
 Lys Ser Ala Phe Val Asn Val Gly Asp His Cys Glu Gly Leu Gly Val
 500 505 510
 Leu Glu Asp Asn Cys Gly Asn Ala Asp Pro His Lys Gly Cys Ile Cys
 515 520 525
 Ala Asn Asn Ser Phe Ile Gly Trp Ser His Asp Thr Cys Leu Val Asn
 530 535 540
 Asp Arg Cys Gln Ile Phe Ala Asn Ile Leu Leu Asn Gly Ile Asn Ser
 545 550 555 560

SEQLIST-20480.TXT

Gly Thr Thr Cys Ser Thr Asp Leu Gln Leu Pro Asn Thr Glu Val Val
565 570 575

Thr Gly Ile Cys Val Lys Tyr Asp Leu Tyr Gly Ile Thr Gly Gln Gly
580 585 590

Val Phe Lys Glu Val Lys Ala Asp Tyr Tyr Asn Ser Trp Gln Thr Leu
595 600 605

Leu Tyr Asp Val Asn Gly Asn Leu Asn Gly Phe Arg Asp Leu Thr Thr
610 615 620

Asn Lys Thr Tyr Thr Ile Arg Ser Cys Tyr Ser Gly Arg Val Ser Ala
625 630 635 640

Ala Phe His Lys Asp Ala Pro Glu Pro Ala Leu Leu Tyr Arg Asn Ile
645 650 655

Asn Cys Ser Tyr Val Phe Ser Asn Asn Ile Ser Arg Glu Glu Asn Pro
660 665 670

Leu Asn Tyr Phe Asp Ser Tyr Leu Gly Cys Val Val Asn Ala Asp Asn
675 680 685

Arg Thr Asp Glu Ala Leu Pro Asn Cys Asp Leu Arg Met Gly Ala Gly
690 695 700

Leu Cys Val Asp Tyr Ser Lys Ser Arg Arg Ala Asp Arg Ser Val Ser
705 710 715 720

Thr Gly Tyr Arg Leu Thr Thr Phe Glu Pro Tyr Thr Pro Met Leu Val
725 730 735

Asn Asp Ser Val Gln Ser Val Asp Gly Leu Tyr Glu Met Gln Ile Pro
740 745 750

Thr Asn Phe Thr Ile Gly His His Glu Glu Phe Ile Gln Thr Arg Ser
755 760 765

Pro Lys Val Thr Ile Asp Cys Ala Ala Phe Val Cys Gly Asp Asn Thr
770 775 780

Ala Cys Arg Gln Gln Leu Val Glu Tyr Gly Ser Phe Cys Val Asn Val
785 790 795 800

Asn Ala Ile Leu Asn Glu Val Asn Asn Leu Leu Asp Asn Met Gln Leu
805 810 815

Gln Val Ala Ser Ala Leu Met Gln Gly Val Thr Ile Ser Ser Arg Leu
820 825 830

Pro Asp Gly Ile Ser Gly Pro Ile Asp Asp Ile Asn Phe Ser Pro Leu
835 840 845

Leu Gly Cys Ile Gly Ser Thr Cys Ala Glu Asp Gly Asn Gly Pro Ser
850 855 860

Ala Ile Arg Gly Arg Ser Ala Ile Glu Asp Leu Leu Phe Asp Lys Val
865 870 875 880

Lys Leu Ser Asp Val Gly Phe Val Glu Ala Tyr Asn Asn Cys Thr Gly
885 890 895

SEQLIST-20480.TXT

Gly Gln Glu Val Arg Asp Leu Leu Cys Val Gln Ser Phe Asn Gly Ile
900 905 910

Lys Val Leu Pro Pro Val Leu Ser Glu Ser Gln Ile Ser Gly Tyr Thr
915 920 925

Thr Gly Ala Thr Ala Ala Ala Met Phe Pro Pro Trp Ser Ala Ala Ala
930 935 940

Gly Val Pro Phe Ser Leu Ser Val Gln Tyr Arg Ile Asn Gly Leu Gly
945 950 955 960

Val Thr Met Asn Val Leu Ser Glu Asn Gln Lys Met Ile Ala Ser Ala
965 970 975

Phe Asn Asn Ala Leu Gly Ala Ile Gln Asp Gly Phe Asp Ala Thr Asn
980 985 990

Ser Ala Leu Gly Lys Ile Gln Ser Val Val Asn Ala Asn Ala Glu Ala
995 1000 1005

Leu Asn Asn Leu Leu Asn Gln Leu Ser Asn Arg Phe Gly Ala Ile Ser
1010 1015 1020

Ala Ser Leu Gln Glu Ile Leu Thr Arg Leu Glu Ala Val Glu Ala Lys
1025 1030 1035 1040

Ala Gln Ile Asp Arg Leu Ile Asn Gly Arg Leu Thr Ala Leu Asn Ala
1045 1050 1055

Tyr Ile Ser Lys Gln Leu Ser Asp Ser Thr Leu Ile Lys Val Ser Ala
1060 1065 1070

Ala Gln Ala Ile Glu Lys Val Asn Glu Cys Val Lys Ser Gln Thr Thr
1075 1080 1085

Arg Ile Asn Phe Cys Gly Asn Gly Asn His Ile Leu Ser Leu Val Gln
1090 1095 1100

Asn Ala Pro Tyr Gly Leu Tyr Phe Ile His Phe Ser Tyr Val Pro Ile
1105 1110 1115 1120

Ser Phe Thr Thr Ala Asn Val Ser Pro Gly Leu Cys Ile Ser Gly Asp
1125 1130 1135

Arg Gly Leu Ala Pro Lys Ala Gly Tyr Phe Val Gln Asp Asp Gly Glu
1140 1145 1150

Trp Lys Phe Thr Gly Ser Ser Tyr Tyr Tyr Pro Glu Pro Ile Thr Asp
1155 1160 1165

Lys Asn Ser Val Ile Met Ser Ser Cys Ala Val Asn Tyr Thr Lys Ala
1170 1175 1180

Pro Glu Val Phe Leu Asn Thr Ser Ile Pro Asn Pro Pro Asp Phe Lys
1185 1190 1195 1200

Glu Glu Leu Asp Lys Trp Phe Lys Asn Gln Thr Ser Ile Ala Pro Asp
1205 1210 1215

Leu Ser Leu Asp Phe Glu Lys Leu Asn Val Thr Leu Leu Asp Leu Thr
1220 1225 1230

SEQLIST-20480.TXT

Tyr Glu Met Asn Arg Ile Gln Asp Ala Ile Lys Lys Leu Asn Glu Ser
1235 1240 1245

Tyr Ile Asn Leu Lys Glu Val Gly Thr Tyr Glu Met Tyr Val Lys Trp
1250 1255 1260

Pro Trp Tyr Val Trp Leu Leu Ile Gly Leu Ala Gly Val Ala Val Cys
1265 1270 1275 1280

Val Leu Leu Phe Phe Ile Cys Cys Cys Thr Gly Cys Gly Ser Cys Cys
1285 1290 1295

Phe Lys Lys Cys Gly Asn Cys Cys Asp Glu Tyr Gly Gly His Gln Asp
1300 1305 1310

Ser Ile Val Ile His Asn Ile Ser Ser His Glu Asp
1315 1320

<210> 6070
<211> 228
<212> PRT
<213> Murine hepatitis virus

<400> 6070
Met Ser Ser Thr Thr Gln Ala Pro Glu Pro Val Tyr Gln Trp Thr Ala
1 5 10 15

Asp Glu Ala Val Gln Phe Leu Lys Glu Trp Asn Phe Ser Leu Gly Ile
20 25 30

Ile Leu Leu Phe Ile Thr Ile Ile Leu Gln Phe Gly Tyr Thr Ser Arg
35 40 45

Ser Met Phe Ile Tyr Val Val Lys Met Ile Ile Leu Trp Leu Met Trp
50 55 60

Pro Leu Thr Ile Val Leu Cys Ile Phe Asn Cys Val Tyr Ala Leu Asn
65 70 75 80

Asn Val Tyr Leu Gly Phe Ser Ile Val Phe Thr Ile Val Ser Ile Val
85 90 95

Ile Trp Ile Met Tyr Phe Val Asn Ser Ile Arg Leu Phe Ile Arg Thr
100 105 110

Gly Ser Trp Trp Ser Phe Asn Pro Glu Thr Asn Asn Leu Met Cys Ile
115 120 125

Asp Met Lys Gly Thr Val Tyr Val Arg Pro Ile Ile Glu Asp Tyr His
130 135 140

Thr Leu Thr Ala Thr Ile Ile Arg Gly His Leu Tyr Met Gln Gly Val
145 150 155 160

Lys Leu Gly Thr Gly Phe Ser Leu Ser Asp Leu Pro Ala Tyr Val Thr
165 170 175

Val Ala Lys Val Ser His Leu Cys Thr Tyr Lys Arg Ala Phe Leu Asp
180 185 190

Lys Val Asp Gly Val Ser Gly Phe Ala Val Tyr Val Lys Ser Lys Val
195 200 205

SEQLIST-20480.TXT

Gly Asn Tyr Arg Leu Pro Ser Asn Lys Pro Ser Gly Ala Asp Thr Ala
210 215 220

Leu Leu Arg Ile
225

<210> 6071
<211> 454
<212> PRT
<213> Murine hepatitis virus

<400> 6071
Met Ser Phe Val Pro Gly Gln Glu Asn Ala Gly Gly Arg Ser Ser Ser
1 5 10 15

Val Asn Arg Ala Gly Asn Gly Ile Leu Lys Lys Thr Thr Trp Ala Asp
20 25 30

Gln Thr Glu Arg Gly Pro Asn Asn Gln Asn Arg Gly Arg Arg Asn Gln
35 40 45

Pro Lys Gln Thr Ala Thr Thr Gln Pro Asn Ser Gly Ser Val Val Pro
50 55 60

His Tyr Ser Trp Phe Ser Gly Ile Thr Gln Phe Gln Lys Gly Lys Glu
65 70 75 80

Phe Gln Phe Ala Glu Gly Gln Gly Val Pro Ile Ala Asn Gly Ile Pro
85 90 95

Ala Ser Glu Gln Lys Gly Tyr Trp Tyr Arg His Asn Arg Arg Ser Phe
100 105 110

Lys Thr Pro Asp Gly Gln Gln Lys Gln Leu Leu Pro Arg Trp Tyr Phe
115 120 125

Tyr Tyr Leu Gly Thr Gly Pro His Ala Gly Ala Ser Tyr Gly Asp Ser
130 135 140

Ile Glu Gly Val Phe Trp Val Ala Asn Ser Gln Ala Asp Thr Asn Thr
145 150 155 160

Arg Ser Asp Ile Val Glu Arg Asp Pro Ser Ser His Glu Ala Ile Pro
165 170 175

Thr Arg Phe Ala Pro Gly Thr Val Leu Pro Gln Gly Phe Tyr Val Glu
180 185 190

Gly Ser Gly Arg Ser Ala Pro Ala Ser Arg Ser Gly Ser Arg Ser Gln
195 200 205

Ser Arg Gly Pro Asn Asn Arg Ala Arg Ser Ser Ser Asn Gln Arg Gln
210 215 220

Pro Ala Ser Thr Val Lys Pro Asp Met Ala Glu Glu Ile Ala Ala Leu
225 230 235 240

Val Leu Ala Lys Leu Gly Lys Asp Ala Gly Gln Pro Lys Gln Val Thr
245 250 255

Lys Gln Ser Ala Lys Glu Val Arg Gln Lys Ile Leu Asn Lys Pro Arg
260 265 270

SEQLIST-20480.TXT

Gln Lys Arg Thr Pro Asn Lys Gln Cys Pro Val Gln Gln Cys Phe Gly
275 280 285

Lys Arg Gly Pro Asn Gln Asn Phe Gly Gly Ser Glu Met Leu Lys Leu
290 295 300

Gly Thr Ser Asp Pro Gln Phe Pro Ile Leu Ala Glu Leu Ala Pro Thr
305 310 315 320

Val Gly Ala Phe Phe Phe Gly Ser Lys Leu Glu Leu Val Lys Lys Asn
325 330 335

Ser Gly Gly Ala Asp Glu Pro Thr Lys Asp Val Tyr Glu Leu Gln Tyr
340 345 350

Ser Gly Ala Val Arg Phe Asp Ser Thr Leu Pro Gly Phe Glu Thr Ile
355 360 365

Met Lys Val Leu Asn Glu Asn Leu Asn Ala Tyr Gln Lys Asp Gly Gly
370 375 380

Ala Asp Val Val Ser Pro Lys Pro Gln Arg Lys Gly Arg Arg Gln Ala
385 390 395 400

Gln Glu Lys Lys Asp Glu Val Asp Asn Val Ser Val Ala Lys Pro Lys
405 410 415

Ser Ser Val Gln Arg Asn Val Ser Arg Glu Leu Thr Pro Glu Asp Arg
420 425 430

Ser Leu Leu Ala Gln Ile Leu Asp Asp Gly Val Val Pro Asp Gly Leu
435 440 445

Glu Asp Asp Ser Asn Val
450

<210> 6072
<211> 1162
<212> PRT
<213> Avian infectious bronchitis virus

<400> 6072
Met Leu Val Thr Pro Leu Leu Leu Val Thr Leu Leu Cys Ala Leu Cys
1 5 10 15

Ser Ala Val Leu Tyr Asp Ser Ser Ser Tyr Val Tyr Tyr Tyr Gln Ser
20 25 30

Ala Phe Arg Pro Pro Ser Gly Trp His Leu Gln Gly Gly Ala Tyr Ala
35 40 45

Val Val Asn Ile Ser Ser Glu Phe Asn Asn Ala Gly Ser Ser Ser Gly
50 55 60

Cys Thr Val Gly Ile Ile His Gly Gly Arg Val Val Asn Ala Ser Ser
65 70 75 80

Ile Ala Met Thr Ala Pro Ser Ser Gly Met Ala Trp Ser Ser Ser Gln
85 90 95

Phe Cys Thr Ala His Cys Asn Phe Ser Asp Thr Thr Val Phe Val Thr
100 105 110

SEQLIST-20480.TXT

His Cys Tyr Lys His Gly Gly Cys Pro Leu Thr Gly Met Leu Gln Gln
 115 120 125
 Asn Leu Ile Arg Val Ser Ala Met Lys Asn Gly Gln Leu Phe Tyr Asn
 130 135 140
 Leu Thr Val Ser Val Ala Lys Tyr Pro Thr Phe Arg Ser Phe Gln Cys
 145 150 155 160
 Val Asn Asn Leu Thr Ser Val Tyr Leu Asn Gly Asp Leu Val Tyr Thr
 165 170 175
 Ser Asn Glu Thr Ile Asp Val Thr Ser Ala Gly Val Tyr Phe Lys Ala
 180 185 190
 Gly Gly Pro Ile Thr Tyr Lys Val Met Arg Glu Val Lys Ala Leu Ala
 195 200 205
 Tyr Phe Val Asn Gly Thr Ala Gln Asp Val Ile Leu Cys Asp Gly Ser
 210 215 220
 Pro Arg Gly Leu Leu Ala Cys Gln Tyr Asn Thr Gly Asn Phe Ser Asp
 225 230 235 240
 Gly Phe Tyr Pro Phe Thr Asn Ser Ser Leu Val Lys Gln Lys Phe Ile
 245 250 255
 Val Tyr Arg Glu Asn Ser Val Asn Thr Thr Cys Thr Leu His Asn Phe
 260 265 270
 Ile Phe His Asn Glu Thr Gly Ala Asn Pro Asn Pro Ser Gly Val Gln
 275 280 285
 Asn Ile Gln Thr Tyr Gln Thr Lys Thr Ala Gln Ser Gly Tyr Tyr Asn
 290 295 300
 Phe Asn Phe Ser Phe Leu Ser Ser Phe Val Tyr Lys Glu Ser Asn Phe
 305 310 315 320
 Met Tyr Gly Ser Tyr His Pro Ser Cys Lys Phe Arg Leu Glu Thr Ile
 325 330 335
 Asn Asn Gly Leu Trp Phe Asn Ser Leu Ser Val Ser Ile Ala Tyr Gly
 340 345 350
 Pro Leu Gln Gly Gly Cys Lys Gln Ser Val Phe Lys Gly Arg Ala Thr
 355 360 365
 Cys Cys Tyr Ala Tyr Ser Tyr Gly Gly Pro Ser Leu Cys Lys Gly Val
 370 375 380
 Tyr Ser Gly Glu Leu Asp His Asn Phe Glu Cys Gly Leu Leu Val Tyr
 385 390 395 400
 Val Thr Lys Ser Gly Gly Ser Arg Ile Gln Thr Ala Thr Glu Pro Pro
 405 410 415
 Val Ile Thr Gln Asn Asn Tyr Asn Asn Ile Thr Leu Asn Thr Cys Val
 420 425 430
 Asp Tyr Asn Ile Tyr Gly Arg Thr Gly Gln Gly Phe Ile Thr Asn Val
 435 440 445

SEQLIST-20480.TXT

Thr Asp Ser Ala Val Ser Tyr Asn Tyr Leu Ala Asp Ala Gly Leu Ala
 450 455 460
 Ile Leu Asp Thr Ser Gly Ser Ile Asp Ile Phe Val Val Gln Gly Glu
 465 470 475 480
 Tyr Gly Leu Asn Tyr Tyr Lys Val Asn Pro Cys Glu Asp Val Asn Gln
 485 490 495
 Gln Phe Val Val Ser Gly Gly Lys Leu Val Gly Ile Leu Thr Ser Arg
 500 505 510
 Asn Glu Thr Gly Ser Gln Leu Leu Glu Asn Gln Phe Tyr Ile Lys Ile
 515 520 525
 Thr Asn Gly Thr Arg Arg Phe Arg Arg Ser Ile Thr Glu Asn Val Ala
 530 535 540
 Asn Cys Pro Tyr Val Ser Tyr Gly Lys Phe Cys Ile Lys Pro Asp Gly
 545 550 555 560
 Ser Ile Ala Thr Ile Val Pro Lys Gln Leu Glu Gln Phe Val Ala Pro
 565 570 575
 Leu Phe Asn Val Thr Glu Asn Val Leu Ile Pro Asn Ser Phe Asn Leu
 580 585 590
 Thr Val Thr Asp Glu Tyr Ile Gln Thr Arg Met Asp Lys Val Gln Ile
 595 600 605
 Asn Cys Leu Gln Tyr Val Cys Gly Ser Ser Leu Asp Cys Arg Lys Leu
 610 615 620
 Phe Gln Gln Tyr Gly Pro Val Cys Asp Asn Ile Leu Ser Val Val Asn
 625 630 635 640
 Ser Val Gly Gln Lys Glu Asp Met Glu Leu Leu Asn Phe Tyr Ser Ser
 645 650 655
 Thr Lys Pro Ala Gly Phe Asn Thr Pro Val Leu Ser Asn Val Ser Thr
 660 665 670
 Gly Glu Phe Asn Ile Ser Leu Leu Leu Thr Asn Pro Ser Ser Arg Arg
 675 680 685
 Lys Arg Ser Leu Ile Glu Asp Leu Leu Phe Thr Ser Val Glu Ser Val
 690 695 700
 Gly Leu Pro Thr Asn Asp Ala Tyr Lys Asn Cys Thr Ala Gly Pro Leu
 705 710 715 720
 Gly Phe Phe Lys Asp Leu Ala Cys Ala Arg Glu Tyr Asn Gly Leu Leu
 725 730 735
 Val Leu Pro Pro Ile Ile Thr Ala Glu Met Gln Ala Leu Tyr Thr Ser
 740 745 750
 Ser Leu Val Ala Ser Met Ala Phe Gly Gly Ile Thr Ala Ala Gly Ala
 755 760 765
 Ile Pro Phe Ala Thr Gln Leu Gln Ala Arg Ile Asn His Leu Gly Ile
 770 775 780

SEQLIST-20480.TXT

Thr 785 Gln Ser Leu Leu 790 Leu Lys Asn Gln Gln Lys 795 Ile Ala Ala Ser Phe 800
 Asn Lys Ala Ile 805 Gly His Met Gln Glu Gly 810 Phe Arg Ser Thr Ser 815 Leu
 Ala Leu Gln Gln 820 Ile Gln Asp Val Val 825 Ser Lys Gln Ser Ala 830 Ile Leu
 Thr Glu Thr 835 Met Ala Ser Leu Asn 840 Lys Asn Phe Gly Ala 845 Ile Ser Ser
 Val Ile 850 Gln Glu Ile Tyr Gln 855 Gln Phe Asp Ala Ile 860 Gln Ala Asn Ala
 Gln 865 Val Asp Arg Leu Ile 870 Thr Gly Arg Leu Ser 875 Ser Leu Ser Val Leu 880
 Ala Ser Ala Lys Gln 885 Ala Glu Tyr Ile Arg 890 Val Ser Gln Gln Arg 895 Glu
 Leu Ala Thr Gln 900 Lys Ile Asn Glu Cys 905 Val Lys Ser Gln Ser 910 Ile Arg
 Tyr Ser Phe 915 Cys Gly Asn Gly Arg 920 His Val Leu Thr Ile 925 Pro Gln Asn
 Ala Pro 930 Asn Gly Ile Val Phe 935 Ile His Phe Ser Tyr 940 Thr Pro Asp Ser
 Phe 945 Val Asn Val Thr Ala 950 Ile Val Gly Phe Cys 955 Val Lys Pro Ala Asn 960
 Ala Ser Gln Tyr Ala 965 Ile Val Pro Ala Asn 970 Gly Arg Gly Ile Phe 975 Ile
 Gln Val Asn Gly 980 Ser Tyr Tyr Ile Thr 985 Ala Arg Asp Met Tyr 990 Met Pro
 Arg Ala Ile 995 Thr Ala Gly Asp Val 1000 Val Thr Leu Thr Ser 1005 Cys Gln Ala
 Asn Tyr Val Ser Val Asn 1010 Lys Thr Val Ile Thr Thr 1020 Phe Val Asp Asn
 Asp 1025 Asp Phe Asp Phe Asn 1030 Asp Glu Leu Ser Lys 1035 Trp Trp Asn Asp Thr 1040
 Lys His Glu Leu Pro 1045 Asp Phe Asp Lys Phe 1050 Asn Tyr Thr Val Pro Ile 1055
 Leu Asp Ile Asp Ser Glu Ile Asp Arg 1065 Ile Gln Gly Val Ile 1070 Gln Gly
 Leu Asn Asp Ser Leu Ile Asp Leu 1080 Glu Lys Leu Ser Ile 1085 Leu Lys Thr
 Tyr Ile Lys Trp Pro Trp Tyr 1095 Val Trp Leu Ala Ile 1100 Ala Phe Ala Thr
 Ile 1105 Ile Phe Ile Leu Ile 1110 Leu Gly Trp Val Phe 1115 Phe Met Thr Gly Cys 1120

SEQLIST-20480.TXT

Cys Gly Cys Cys Cys Gly Cys Phe Gly Ile Met Pro Leu Met Ser Lys
1125 1130 1135

Cys Gly Lys Lys Ser Ser Tyr Tyr Thr Thr Phe Asp Asn Asp Val Val
1140 1145 1150

Thr Glu Gln Tyr Arg Pro Lys Lys Ser Val
1155 1160

<210> 6073
<211> 108
<212> PRT
<213> Avian infectious bronchitis virus

<400> 6073
Met Asn Leu Leu Asn Lys Ser Leu Glu Glu Asn Gly Ser Phe Leu Thr
1 5 10 15

Ala Leu Tyr Ile Ile Val Gly Phe Leu Ala Leu Tyr Leu Leu Gly Arg
20 25 30

Ala Leu Gln Ala Phe Val Gln Ala Ala Asp Ala Cys Cys Leu Phe Trp
35 40 45

Tyr Thr Trp Val Val Ile Pro Gly Ala Lys Gly Thr Ala Phe Val Tyr
50 55 60

Lys Tyr Thr Tyr Gly Arg Lys Leu Asn Asn Pro Glu Leu Glu Ala Val
65 70 75 80

Ile Val Asn Glu Phe Pro Lys Asn Gly Trp Asn Asn Lys Asn Pro Ala
85 90 95

Asn Phe Gln Asp Ala Gln Arg Asp Lys Leu Tyr Ser
100 105

<210> 6074
<211> 225
<212> PRT
<213> Avian infectious bronchitis virus

<400> 6074
Met Pro Asn Glu Thr Asn Cys Thr Leu Asp Phe Glu Gln Ser Val Gln
1 5 10 15

Leu Phe Lys Glu Tyr Asn Leu Phe Ile Thr Ala Phe Leu Leu Phe Leu
20 25 30

Thr Ile Ile Leu Gln Tyr Gly Tyr Ala Thr Arg Ser Lys Val Ile Tyr
35 40 45

Thr Leu Lys Met Ile Val Leu Trp Cys Phe Trp Pro Leu Asn Ile Ala
50 55 60

Val Gly Val Ile Ser Cys Thr Tyr Pro Pro Asn Thr Gly Gly Leu Val
65 70 75 80

Ala Ala Ile Ile Leu Thr Val Phe Ala Cys Leu Ser Phe Val Gly Tyr
85 90 95

Trp Ile Gln Ser Ile Arg Leu Phe Lys Arg Cys Arg Ser Trp Trp Ser
100 105 110

SEQLIST-20480.TXT

Phe Asn Pro Glu Ser Asn Ala Val Gly Ser Ile Leu Leu Thr Asn Gly
 115 120 125
 Gln Gln Cys Asn Phe Ala Ile Glu Ser Val Pro Met Val Leu Ser Pro
 130 135 140
 Ile Ile Lys Asn Gly Val Leu Tyr Cys Glu Gly Gln Trp Leu Ala Lys
 145 150 155 160
 Cys Glu Pro Asp His Leu Pro Lys Asp Ile Phe Val Cys Thr Pro Asp
 165 170 175
 Arg Arg Asn Ile Tyr Arg Met Val Gln Lys Tyr Thr Gly Asp Gln Ser
 180 185 190
 Gly Asn Lys Lys Arg Phe Ala Thr Phe Val Tyr Ala Lys Gln Ser Val
 195 200 205
 Asp Thr Gly Glu Leu Glu Ser Val Ala Thr Gly Gly Ser Ser Leu Tyr
 210 215 220
 Thr
 225

<210> 6075
 <211> 409
 <212> PRT
 <213> Avian infectious bronchitis virus

<400> 6075
 Met Ala Ser Gly Lys Ala Ala Gly Lys Thr Asp Ala Pro Ala Pro Val
 1 5 10 15
 Ile Lys Leu Gly Gly Pro Lys Pro Pro Lys Val Gly Ser Ser Gly Asn
 20 25 30
 Ala Ser Trp Phe Gln Ala Ile Lys Ala Lys Lys Leu Asn Thr Pro Pro
 35 40 45
 Pro Lys Phe Glu Gly Ser Gly Val Pro Asp Asn Glu Asn Ile Lys Pro
 50 55 60
 Ser Gln Gln His Gly Tyr Trp Arg Arg Gln Ala Arg Phe Lys Pro Gly
 65 70 75 80
 Lys Gly Gly Arg Lys Pro Val Pro Asp Ala Trp Tyr Phe Tyr Tyr Thr
 85 90 95
 Gly Thr Gly Pro Ala Ala Asp Leu Asn Trp Gly Asp Thr Gln Asp Gly
 100 105 110
 Ile Val Trp Val Ala Ala Lys Gly Ala Asp Thr Lys Ser Arg Ser Asn
 115 120 125
 Gln Gly Thr Arg Asp Pro Asp Lys Phe Asp Gln Tyr Pro Leu Arg Phe
 130 135 140
 Ser Asp Gly Gly Pro Asp Gly Asn Phe Arg Trp Asp Phe Ile Pro Leu
 145 150 155 160
 Asn Arg Gly Arg Ser Gly Arg Ser Thr Ala Ala Ser Ser Ala Ala Ala
 165 170 175

SEQLIST-20480.TXT

Ser Arg Ala Pro Ser Arg Glu Gly Ser Arg Gly Arg Arg Ser Asp Ser
180 185 190
Gly Asp Asp Leu Ile Ala Arg Ala Lys Ile Ile Gln Asp Gln Gln
195 200 205
Lys Lys Gly Ser Arg Ile Thr Lys Ala Lys Ala Asp Glu Met Ala His
210 215 220
Arg Arg Tyr Cys Lys Arg Thr Ile Pro Pro Asn Tyr Arg Val Asp Gln
225 230 235 240
Val Phe Gly Pro Arg Thr Lys Gly Lys Glu Gly Asn Phe Gly Asp Asp
245 250 255
Lys Met Asn Glu Gly Ile Lys Asp Gly Arg Val Thr Ala Met Leu
260 265 270
Asn Leu Val Pro Ser Ser His Ala Cys Leu Phe Gly Ser Arg Val Thr
275 280 285
Pro Lys Leu Gln Leu Asp Gly Leu His Leu Arg Phe Glu Phe Thr Thr
290 295 300
Val Val Pro Cys Asp Asp Pro Gln Phe Asp Asn Tyr Val Lys Ile Cys
305 310 315 320
Asp Gln Cys Val Asp Gly Val Gly Thr Arg Pro Lys Asp Asp Glu Pro
325 330 335
Lys Pro Lys Ser Arg Ser Ser Ser Arg Pro Ala Thr Arg Gly Asn Ser
340 345 350
Pro Ala Pro Arg Gln Gln Arg Pro Lys Lys Glu Lys Lys Leu Lys Lys
355 360 365
Gln Asp Asp Glu Ala Asp Lys Ala Leu Thr Ser Asp Glu Glu Arg Asn
370 375 380
Asn Ala Gln Leu Glu Phe Tyr Asp Glu Pro Lys Val Ile Asn Trp Gly
385 390 395 400
Asp Ala Ala Leu Gly Glu Asn Glu Leu
405

<210> 6076
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6076
ctaccagga aaagccaac

19

<210> 6077
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

SEQLIST-20480.TXT

<400>	6077	
gagtaactcg tccctcttct g		21
<210>	6078	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6078	
caactcagtt tgcctgtcc		19
<210>	6079	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6079	
gcataccgca atgttcttct tc		22
<210>	6080	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6080	
gaacaaaact ggaacactaa gc		22
<210>	6081	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6081	
cactctttcc gaacaacttg attac		25
<210>	6082	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6082	
tgataagagc tacgagcacc		20
<210>	6083	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6083
tgtaccctgt tgcattctcc                                19

<210>    6084
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6084
tcaaacattg aaactcgact cc                                22

<210>    6085
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6085
ctttctctgc ttctacaagt gcc                                23

<210>    6086
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6086
gtctttcaaa accattggtg agtcc                                25

<210>    6087
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6087
tacttcagac ctgctcacc                                19

<210>    6088
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6088
cgtcaagggt caaatacagg                                20

<210>    6089

```

```

<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6089
ctgcaactac tcatgcctc 19

<210> 6090
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6090
ttgggaagtt caaggttaca ag 22

<210> 6091
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6091
ctctgtctac actgttgaat cc 22

<210> 6092
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6092
cgtatgtatt gttcctttta ccctc 25

<210> 6093
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6093
agaacctaca cctgaagaac c 21

<210> 6094
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6094

```

cattaagcta aatggccctc ttac	SEQLIST-20480.TXT	24
<210> 6095		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6095		
tcacaggaca tcttacttgc ac		22
<210> 6096		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6096		
ctttccttga gaaggatgca c		21
<210> 6097		
<211> 25		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6097		
gttgatgagt atataaccac gtacc		25
<210> 6098		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6098		
gccataatgg caaccatcca ac		22
<210> 6099		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6099		
gctgaactct ctaaagagc c		21
<210> 6100		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    6100
caaagacatc tgaggagcac                20
<210>    6101
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6101
ggacaacact aatctccaca c              21
<210>    6102
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6102
gaagtcaaat tcaatgcacc ag            22
<210>    6103
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6103
gagaaactat gacccatctt ctac          24
<210>    6104
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6104
gttatgatgt ctgcaccacc                20
<210>    6105
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6105
gctatctgtc acattcttcc c             21
<210>    6106
<211>    21
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer

<400> 6106
gaagacacac aaggaatgga c 21

<210> 6107
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6107
ggattttctgt gaaggttctt ttcc 24

<210> 6108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6108
tcatcagcaa ttcttggtc 20

<210> 6109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6109
gctataagcg caatcgtgcc 20

<210> 6110
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6110
agaccaatca accctactga c 21

<210> 6111
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6111
tccgctctcc cattttgtc 19

```

<210> 6112
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6112
 gtctgcttct gtgtactaca gtc 23

<210> 6113
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6113
 gcacttggtg ctacagctc 19

<210> 6114
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6114
 ctcaaacttt cacatcactc tgac 24

<210> 6115
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6115
 gaaaacatga cgcccagag 19

<210> 6116
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6116
 gccagtacat acattgtcaa tcc 23

<210> 6117
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	6117	
	gctacacacc ttccaaactc	20
<210>	6118	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6118	
	gatgcatga atctcatagc taac	24
<210>	6119	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6119	
	gtattttctct gaagcactgc c	21
<210>	6120	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6120	
	gaagggtgca tggtaacaag	19
<210>	6121	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6121	
	gtcatttgca cagcagaaga c	21
<210>	6122	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6122	
	tgatacttct aaccctaaga cacc	24
<210>	6123	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6123
gcaggtacag acacaaccat aac                23

<210>    6124
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6124
ctgctttgaa agagctgctg                    20

<210>    6125
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6125
gttaagcata agcacgcatt c                  21

<210>    6126
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6126
gacagctcgc actgtttatg atg                23

<210>    6127
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6127
gctgctactt tggccttttc                    20

<210>    6128
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6128
ttaagttggt gggatttgga gg                22

<210>    6129
<211>    24

```



```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6129
cggtttcttca acaacttaga gtag                24

<210> 6130
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6130
tatgccgctt atgccactg                19

<210> 6131
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6131
gaggacaaga gggcaaaag                19

<210> 6132
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6132
accattgact acagcagcc                19

<210> 6133
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6133
gcattactat cagaccacca ag            22

<210> 6134
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6134
tgctacagaa gtacctgcc                19

```

SEQLIST-20480.TXT

<210> 6135
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6135
 gccacattga ccatccaaat cc 22

<210> 6136
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6136
 cctaccactt gtgctaata cc 22

<210> 6137
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6137
 actcgtcaca tacaattgct g 21

<210> 6138
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6138
 tgcccatcct cactttgac 19

<210> 6139
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6139
 gttaggagtc gtacataatc agg 23

<210> 6140
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

SEQLIST-20480.TXT

<400>	6140	
	gggtaaggct agactttatt atgac	25
<210>	6141	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6141	
	gcgtaatgtc atccctacta taactc	26
<210>	6142	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6142	
	tgtggtatt ggaacaagca ag	22
<210>	6143	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6143	
	atccaaaatg tgacagagcc	20
<210>	6144	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6144	
	gcggctcact atatgttaaa ccag	24
<210>	6145	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6145	
	acagccaatg taaatgcact tc	22
<210>	6146	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   6146
gtccgcaatc tacaacacag                20

<210>   6147
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6147
tacctgcctt acccagatcc                20

<210>   6148
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6148
gctaactaat gataacacct cacg          24

<210>   6149
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6149
gaccatgtca tttcaacatc ac            22

<210>   6150
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6150
gcaagtcaca taagcctccc                20

<210>   6151
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6151
agcagaaacg ctcaaagcc                19

<210>   6152

```

```

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6152
gacatctcac actgtaatgc c 21

<210> 6153
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6153
ctctacactc caaggaccac 20

<210> 6154
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6154
tcctgctcaa ttaccagcc 19

<210> 6155
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6155
cagtgtgcag acttatgaaa ac 22

<210> 6156
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6156
ttcatctgca atcaacagac c 21

<210> 6157
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6157

```

taggattgcc tacgcagac	19
<210> 6158	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6158	
tcctacacag gcacctacac	20
<210> 6159	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6159	
acataccagg cataccaaag gac	23
<210> 6160	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6160	
cctctccagc taggattttc tac	23
<210> 6161	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6161	
tcaccagagt taatgcaaaa cc	22
<210> 6162	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6162	
tcaagattgg acctgaaaga ac	22
<210> 6163	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	

```

<223>    Primer
<400>    6163
aaccatgacc aacattgcc                                19
<210>    6164
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6164
aaggctatca agtgtgtgcc tc                            22
<210>    6165
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6165
gctacacatc acgataaatt cactg                        25
<210>    6166
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6166
tgagtctcat ggcaaacaag                              20
<210>    6167
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6167
aaaggacact ttgatggaca c                            21
<210>    6168
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6168
tgggctaagc gtaacattaa accag                        25
<210>    6169
<211>    22
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer

<400> 6169
tcgctgctaa tactgtaatc tg 22

<210> 6170
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6170
ggtgtctgca caatgactg 19

<210> 6171
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6171
tgcaacacgg acgaaac 17

<210> 6172
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6172
gcactagcac gtctctaacc 20

<210> 6173
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6173
agtgttatac cgctacgacc 20

<210> 6174
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6174
ctgccatgct tagtggttcc 19

```


<210>	6175	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6175	
	acctctcttc gactcgatg	19
<210>	6176	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6176	
	aggaaacaca aactttgggc	20
<210>	6177	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6177	
	tatacgcccc atgaaaccc	19
<210>	6178	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6178	
	cacacagcct ccaaaacatc	20
<210>	6179	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6179	
	gtagaagcag agaaagatgc c	21
<210>	6180	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	6180	
	ctgatctctg ttgtccaatg ttcc	24
<210>	6181	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6181	
	gacgtaatga ctgttcagaa atacc	25
<210>	6182	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6182	
	aagcaacctg tatttgaccc	20
<210>	6183	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6183	
	ttgagcgatg aagacttcac	20
<210>	6184	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6184	
	cttcccaaac agtatcttct cc	22
<210>	6185	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6185	
	tcacaacagc ctctgctac	19
<210>	6186	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	

```

<220>
<223>   Primer

<400>   6186
catcaatttc ttcttcctca cactc                25

<210>   6187
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6187
tcctcttctt cttcctcaac tc                22

<210>   6188
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6188
agcaaacaag accctcctac                20

<210>   6189
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6189
ccaaatatgc ctgctgacaa c                21

<210>   6190
<211>   25
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6190
ccttaatttt tggcttcaca tcgac            25

<210>   6191
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6191
ggttatatac tcatcaactg gcac            24

<210>   6192
<211>   22

```

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6192	
	gcaagcattt ctctcaaatt cc	22
<210>	6193	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6193	
	gcgcagcctc ttcaagatta aaac	24
<210>	6194	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6194	
	aagagccagc caaagaaac	19
<210>	6195	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6195	
	gtaacatcag caccatccaa g	21
<210>	6196	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6196	
	cctaccaaga aaactctcat caag	24
<210>	6197	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6197	
	tgaccacaat gtttacacac c	21

SEQLIST-20480.TXT

<210>	6198	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6198	
	tagcatcacg accacacac	19
<210>	6199	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6199	
	gttcaatctc tgtgtaagta actcc	25
<210>	6200	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6200	
	gtccattcct tgtgtgtcctt c	21
<210>	6201	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6201	
	ttccacataa gcagccataa g	21
<210>	6202	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6202	
	atgccaaaac ccactcagc	19
<210>	6203	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	6203	
	ggcctccatt tgcata	19
<210>	6204	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6204	
	gccatttttc acagcaacac t	24
<210>	6205	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6205	
	ggacttgcca tcaaaaacta tg	24
<210>	6206	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6206	
	cttcagtact atctccaacg t	22
<210>	6207	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6207	
	ggaacactaa aagttgctga aa	25
<210>	6208	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6208	
	caactgtcac ctgtcacttc	20
<210>	6209	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   6209
tgactttttg ctacttgggc                20

<210>   6210
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6210
gttcttcttg gcagcactac                20

<210>   6211
<211>   17
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6211
agcagcaaga acgcaag                  17

<210>   6212
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6212
ttcatcgcat caacaccac                19

<210>   6213
<211>   25
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6213
ccaaaaaggc acaataggag aaaac        25

<210>   6214
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6214
tgccattttc ctaaaaccac tc           22

<210>   6215

```

SEQLIST-20480.TXT

```

<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6215
aacattgccac gcctgaac 18

<210> 6216
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6216
tcaactttaa gcctaagcag ac 22

<210> 6217
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6217
gataacagca gcatacagcc 20

<210> 6218
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6218
gcagctcttt caaagcagca c 21

<210> 6219
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6219
gcatccaatg atgagtgcc 19

<210> 6220
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6220

```


	SEQLIST-20480.TXT	
aaacacgtct agcagcatc		19
<210> 6221		
<211> 25		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6221		
gtcgtaacga caccagaata gttag		25
<210> 6222		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6222		
tttacctcca atacccaaca ac		22
<210> 6223		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6223		
cattgtggag ttgtacacat tg		22
<210> 6224		
<211> 18		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6224		
agcatttcct cgcacaac		18
<210> 6225		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6225		
acttttgccc tcttgcctc		20
<210> 6226		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		

<223> Primer

<400> 6226
cagggacaac aaccatgag 19

<210> 6227
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6227
atgccagcac aaacctacc 19

<210> 6228
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6228
aagcacagaa ggaaagcac 19

<210> 6229
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6229
cttacctttc aagtcacaga atcc 24

<210> 6230
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6230
tacagccata acctttccac attcc 25

<210> 6231
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6231
tgccttcctc atccttctcc 20

<210> 6232
<211> 19
<212> DNA

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 6232
cctacaatgc ctgcatcac 19
<210> 6233
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6233
gaaggataca cctatcatcc aaac 24
<210> 6234
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6234
tgttagtgc gctactgaaa ag 22
<210> 6235
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6235
ctacagatag agacaccagc tac 23
<210> 6236
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6236
ccaccgtaaa acttgcttgc tc 22
<210> 6237
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6237
gcgagcaaga acaagagag 19

```

SEQLIST-20480.TXT

```

<210> 6238
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6238
tttaacatat agtgagccgc c 21

<210> 6239
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6239
gttgtagatt gcggacatac ttg 23

<210> 6240
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6240
acgcaggtaa gcgtaaaact c 21

<210> 6241
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6241
caatatcatc gacaaaacag cc 22

<210> 6242
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6242
gaaagacatc agcatactcc tg 22

<210> 6243
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

```

<400>	6243	
	gcaaacatag ggattaacag acaac	25
<210>	6244	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6244	
	cacataatgg aaaactaatg ggagg	25
<210>	6245	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6245	
	gtatgtaatc gccagcatta gtcc	24
<210>	6246	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6246	
	acagcatcac catagtcacc	20
<210>	6247	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6247	
	gcaaaatgac tcttaccagt acc	23
<210>	6248	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6248	
	gcaggatcgc caatatagac	20
<210>	6249	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6249
cactcacagt gtcaacaatt tc                                22

<210>    6250
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6250
cattttgaag cattgagctg ac                                22

<210>    6251
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6251
cagaaccctg tgatgaatca ac                                22

<210>    6252
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6252
cagacattat gcacaaaatg cc                                22

<210>    6253
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6253
gggtaaccat tgacttggtta attc                            24

<210>    6254
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6254
catcaaagcc aatccacgca c                                21

<210>    6255
<211>    20

```

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6255	
	tccagggcaa gcctttatac	20
<210>	6256	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6256	
	ccacagaatg attccagcag	20
<210>	6257	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6257	
	taaagcccca ctgctgaac	19
<210>	6258	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6258	
	gaacttccat tctacttcag cc	22
<210>	6259	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6259	
	ccaaaacaaa caaacaccat cagtg	25
<210>	6260	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6260	
	cacatacaaa ctaccaccat cac	23

SEQLIST-20480.TXT

<210>	6261	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6261	
	ggctaaatcc agcagaaatc atc	23
<210>	6262	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6262	
	tacgcttagc ccaaagctc	19
<210>	6263	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6263	
	aatgtcagtc attgtgcaga cacc	24
<210>	6264	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6264	
	ccttccactc taccatcaaa c	21
<210>	6265	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6265	
	gacctttgac tgaaccttct g	21
<210>	6266	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	6266	
cctacttttac	tcagagcaga	gac
		23
<210>	6267	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6267	
gtcagtgatt	tcaaaagtgg	tcaag
		25
<210>	6268	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6268	
tctacccaaa	actacaagca	ag
		22
<210>	6269	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6269	
ttgccaaactg	gcacactac	
		19
<210>	6270	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6270	
tcttggaatg	ctgaccttta	c
		21
<210>	6271	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6271	
gccattctta	cagccttttc	ac
		22
<210>	6272	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6272
ccacttgctg aactcaaatg ctc                                     23

<210>    6273
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6273
ctctgtgctc tacaactcaa c                                     21

<210>    6274
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6274
gccagatgat ttcattgggtt gtgtc                                 25

<210>    6275
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6275
tctaattgtgc ctttctcccc                                     20

<210>    6276
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6276
actgattccg ttcgagatcc                                     20

<210>    6277
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6277
catgcagatc aactcacacc                                     20

<210>    6278

```

SEQLIST-20480.TXT

```

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6278
ggctaaaacc tccgtagatt g 21

<210> 6279
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6279
ttacctgacc ctctaaagcc 20

<210> 6280
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6280
attgctgcct acactgctgc tc 22

<210> 6281
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6281
cggaggtaca aattgacagg 20

<210> 6282
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6282
gctaccacct tatgtccttc c 21

<210> 6283
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6283

```

gcgacatttc aggcattaac	SEQLIST-20480.TXT	20
<210> 6284		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6284		
actctgagcc agttctcaag		20
<210> 6285		
<211> 19		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6285		
acaagcctca ctccccttc		19
<210> 6286		
<211> 26		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6286		
ccaagaaccc attactttat gatgcc		26
<210> 6287		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6287		
ctgaaggtga cggcatttca ac		22
<210> 6288		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6288		
tatgatgagc cgacgacgac		20
<210> 6289		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    6289
tagtcacact agccatcctt ac                22
<210>    6290
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6290
caactcctgg aacaatggaa c                21
<210>    6291
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6291
ttttgtgctt gctgctgtc                19
<210>    6292
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6292
tcttctcaat gtgcctctcc                20
<210>    6293
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6293
gacctgccaa aagagatcac                20
<210>    6294
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6294
tgcgagctat atcactatca gg                22
<210>    6295
<211>    20
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer

<400> 6295
gcccatcagg aacatacgag 20

<210> 6296
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6296
cgaaatccag gatctagaag aac 23

<210> 6297
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6297
gaaggtcacc aaactgctg 19

<210> 6298
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6298
ccacagattc aactgacaat aacc 24

<210> 6299
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6299
tggtgacggc aaaatgaaag 20

<210> 6300
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6300
tcttctcgct cctcatcac 19

```

```

<210> 6301
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6301
gcatctaaaa agcctcgcc 19

<210> 6302
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6302
catacaaaac attcccacca ac 22

<210> 6303
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6303
acaaaagaag cagccac 18

<210> 6304
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6304
cattagggag gacttgaaag ag 22

<210> 6305
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6305
agatcaatca cagaacacac ac 22

<210> 6306
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

```

<400>	6306		
	tacaagttag gcatcgcaac ac		22
<210>	6307		
<211>	21		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6307		
	gtcggagacg aagtcattaa g		21
<210>	6308		
<211>	23		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6308		
	ccacacagat aagtgaaaaa ccc		23
<210>	6309		
<211>	24		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6309		
	gaagacaact ggataggatt tgtg		24
<210>	6310		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6310		
	acatctcctg agggaacaac		20
<210>	6311		
<211>	23		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6311		
	ctctcccatg catagacaga agg		23
<210>	6312		
<211>	21		
<212>	DNA		
<213>	Artificial Sequence		


```

<220>
<223>    Primer

<400>    6312
cagcaataac accagtttgt c                               21

<210>    6313
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6313
ggtttgccat caggggagaa ag                               22

<210>    6314
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6314
acaccagtac cagtgagtcc                               20

<210>    6315
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6315
tcagctccta taagacagcc                               20

<210>    6316
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6316
gcacctaaag acatagtata agcc                           24

<210>    6317
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6317
acttgagcga acacttcac                               19

<210>    6318
<211>    20

```

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6318
aagtccattg aacttctgcg 20

<210> 6319
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6319
cctgtcaatt tgtacctccg cc 22

<210> 6320
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6320
tggaaggac ataaggtgg 19

<210> 6321
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6321
aatgcctgaa atgtcgcc 18

<210> 6322
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6322
gcagcaagaa ccacaagag 19

<210> 6323
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6323
cgccaataac aagcatcc 19

```

SEQLIST-20480.TXT

<210>	6324	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6324	
	tccaacaaag ccaacatctc	20
<210>	6325	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6325	
	cctgagtgcc tatcctcaga ataacc	26
<210>	6326	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6326	
	gcacattcgg tgggtcttta ac	22
<210>	6327	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6327	
	tgactagcaa gaataccacg aaag	24
<210>	6328	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6328	
	tttagaccag aagatcagga actc	24
<210>	6329	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	6329	
ctaagccaca tcaagcctac		20
<210>	6330	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6330	
gagaagaatg tttgtttctg ggttg		25
<210>	6331	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6331	
gcaaaacctg aatcagtgcc		20
<210>	6332	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6332	
ccaaatagca atcctgaaag tcc		23
<210>	6333	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6333	
acaagcaaaa gcaaagtggtg		20
<210>	6334	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6334	
gagcagcaac aatgagaaaa ag		22
<210>	6335	
<211>	17	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   6335
agcacaaagc caagcag                                17

<210>   6336
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6336
cattgcgtcc tccattctg                                19

<210>   6337
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6337
tcattttgcc gtcaccacc                                19

<210>   6338
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6338
tgatgaggag cgagaagag                                19

<210>   6339
<211>   22
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6339
gcctttacca gaaactttgc tc                            22

<210>   6340
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6340
tgcgtcaatg tgcttgttc                                19

<210>   6341

```

```

<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6341
gaatcagcag aagctccac 19

<210> 6342
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6342
gctctcccta gcattattca c 21

<210> 6343
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6343
aaaatcacat ggggatagca c 21

<210> 6344
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6344
ctgagagtgc ttgttcttc 19

<210> 6345
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6345
atcgtttatg gagatttcag 20

<210> 6346
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6346

```

	gagcgtggca accaggtggt	SEQLIST-20480.TXT	20
<210>	6347		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6347		
	ttattattag cgatatgtat		20
<210>	6348		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6348		
	ggaactgctg taatgtctct		20
<210>	6349		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6349		
	aaccctgtca taccttttaa		20
<210>	6350		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6350		
	aataaagatg ggtttctcta		20
<210>	6351		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6351		
	gatgttgta gattccctaa		20
<210>	6352		
<211>	20		
<212>	DNA		
<213>	Artificial Sequence		
<220>			

```

<223>    Primer
<400>    6352
ttgatgctac ttcaactggt                20
<210>    6353
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6353
gccgtgatgt ttctgatttc                20
<210>    6354
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6354
tggcttatac tatgtcttta                20
<210>    6355
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6355
cctgaccctc taaagccaac                20
<210>    6356
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6356
gcgattagtc aaattcaaga                20
<210>    6357
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6357
ctaccacctt atgtccttcc                20
<210>    6358
<211>    20
<212>    DNA

```



```

<213> Artificial Sequence
<220>
<223> Primer

<400> 6358
cgcttctgtc gtcaacattc 20

<210> 6359
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6359
attgacaatg cttctcctgc 20

<210> 6360
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6360
tgatgccaac tactttgttt 20

<210> 6361
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6361
tgagccgacg acgactacta 20

<210> 6362
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6362
gagcttaaac aactcctgga 20

<210> 6363
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6363
tgtgaccaga ccgctcatgg 20

```

SEQLIST-20480.TXT

<210>	6364	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6364	
	ctatttggaa tcttgacgtt	20
<210>	6365	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6365	
	tgcaagatca gtttcaccaa	20
<210>	6366	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6366	
	cctcatgtgc ttgaagatcc	20
<210>	6367	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6367	
	caacacctag ctataagcgc	20
<210>	6368	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6368	
	attaaaacaa ggaatagcag	20
<210>	6369	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

<400>	6369	
	ctgatagtga tatagctcgc	20
<210>	6370	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6370	
	aatcagtgcc tacacgctgc	20
<210>	6371	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6371	
	ctgtagacag cagcaagcac	20
<210>	6372	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6372	
	gcgcagtaag gatggctagt	20
<210>	6373	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6373	
	acaacgacat agtctttaac	20
<210>	6374	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6374	
	gcaaataaac tggaagccct	20
<210>	6375	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

<220>		
<223>	Primer	
<400>	6375	
	gcaacaacta gtcatgcaac	20
<210>	6376	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6376	
	taacgacatc acaatttcct	20
<210>	6377	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6377	
	aggtttgaag gctttgaagt	20
<210>	6378	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6378	
	agcagcagtg taggcagcaa	20
<210>	6379	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6379	
	ccatattgga gaagcaaatt	20
<210>	6380	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6380	
	tgatctgcat gaattgctgt	20
<210>	6381	
<211>	20	

```

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6381
agccaatgcc agtagtggtg 20

<210> 6382
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6382
agaaacgcc tagcacttaa 20

<210> 6383
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6383
tgccccaat gtcttgagca 20

<210> 6384
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6384
ataacaacat tagtagaatt 20

<210> 6385
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6385
cacttgaaac cacaactctg 20

<210> 6386
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6386
ctctgttatc ttacagcta 20

```

SEQLIST-20480.TXT

<210> 6387
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6387
 aagtattgac acagttgagt 20

<210> 6388
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6388
 ttttcactgt gctgtccata 20

<210> 6389
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6389
 tagaccttg actgaacctt 20

<210> 6390
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6390
 ttaatgatgg aaacaggtgc 20

<210> 6391
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6391
 gaaagctgga gtgtggaatg 20

<210> 6392
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

SEQLIST-20480.TXT

<400>	6392	
	ttaaccctca gttcatctcc	20
<210>	6393	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6393	
	ctaccaggga aaagccaac	19
<210>	6394	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6394	
	caactcagtt tgcctgtcc	19
<210>	6395	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6395	
	gaacaaaact ggaacactaa gc	22
<210>	6396	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6396	
	tgataagagc tacgagcacc	20
<210>	6397	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6397	
	tcaaacattg aaactcgact cc	22
<210>	6398	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6398
gtctttcaaa accattgttg agtcc                25

<210>    6399
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6399
cgtcaagggt caaatacagg                20

<210>    6400
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6400
ttggaagtt caaggttaca ag                22

<210>    6401
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6401
cgtatgtatt gttcctttta ccctc            25

<210>    6402
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6402
cattaagcta aatggccctc ttac            24

<210>    6403
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6403
ctttccttga gaaggatgca c                21

<210>    6404

```



```

<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6404
gccataatgg caaccatcca ac 22

<210> 6405
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6405
caaagacatc tgaggagcac 20

<210> 6406
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6406
gaagtcaa at tcaatgcacc ag 22

<210> 6407
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6407
gttatgatgt ctgcaccacc 20

<210> 6408
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6408
gaagacacac aaggaatgga c 21

<210> 6409
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6409

```

tcatacagcaa ttcttggtc	20
<210> 6410	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6410	
agaccaatca accctactga c	21
<210> 6411	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6411	
gtctgcttct gtgtactaca gtc	23
<210> 6412	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6412	
ctcaaacttt cacatcactc tgac	24
<210> 6413	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6413	
gccagtacat acattgtcaa tcc	23
<210> 6414	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 6414	
gatgcatga atctcatagc taac	24
<210> 6415	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	

```

<223>    Primer
<400>    6415
gaagggtgca tggtaacaag
19
<210>    6416
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6416
tgatacttct aaccctaaga cacc
24
<210>    6417
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6417
ctgctttgaa agagctgctg
20
<210>    6418
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6418
gacagctcgc actgtttatg atg
23
<210>    6419
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6419
ttaagttggt gggatttgga gg
22
<210>    6420
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6420
tatgccgctt atgccactg
19
<210>    6421
<211>    19
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 6421
accattgact acagcagcc 19

<210> 6422
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
<400> 6422
tgctacagaa gtacctgcc 19

<210> 6423
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
<400> 6423
cctaccactt gtgctaatga cc 22

<210> 6424
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
<400> 6424
tgcccatcct cactttgac 19

<210> 6425
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
<400> 6425
gggtaaggct agactttatt atgac 25

<210> 6426
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer
<400> 6426
tgtggttaatt ggaacaagca ag 22

```

SEQLIST-20480.TXT

<210> 6427
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6427
 gcggctcact atatgttaaa ccag 24

<210> 6428
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6428
 gtccgcaatc tacaacacag 20

<210> 6429
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6429
 gctaactaat gataacacct cacg 24

<210> 6430
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6430
 gcaagtcaca taagcctccc 20

<210> 6431
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6431
 gacatctcac actgtaatgc c 21

<210> 6432
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	6432	
	tcctgctcaa ttaccagcc	19
<210>	6433	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6433	
	ttcatctgca atcaacagac c	21
<210>	6434	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6434	
	tcctacacag gcacctacac	20
<210>	6435	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6435	
	cctctccagc taggattttc tac	23
<210>	6436	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6436	
	tcaagattgg acctgaaaga ac	22
<210>	6437	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6437	
	aaggctatca agtgtgtgcc tc	22
<210>	6438	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6438
tgagtctcat ggcaaacaag                                20

<210>    6439
<211>    25
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6439
tgggctaagc gtaacattaa accag                            25

<210>    6440
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6440
ggtgtctgca caatgactg                                    19

<210>    6441
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6441
gcactagcac gtctctaacc                                  20

<210>    6442
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6442
ctgccatgct tagtggtcc                                    19

<210>    6443
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6443
aggaaacaca aactttgggc                                  20

<210>    6444
<211>    20

```

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6444
 cacacagcct ccaaaacatc 20

 <210> 6445
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6445
 ctgatctctg ttgtccaatg ttcc 24

 <210> 6446
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6446
 aagcaacctg tatttgacct 20

 <210> 6447
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6447
 cttcccaaac agtatcttct cc 22

 <210> 6448
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6448
 catcaatttc ttcttcctca cactc 25

 <210> 6449
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6449
 agcaaacaag accctcctac 20

SEQLIST-20480.TXT

<210>	6450	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6450	
	ccttaatttt tggcttcaca tcgac	25
<210>	6451	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6451	
	gcaagcattt ctctcaaatt cc	22
<210>	6452	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6452	
	aagagccagc caaagaaac	19
<210>	6453	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6453	
	cctaccaaga aaactctcat caag	24
<210>	6454	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6454	
	tagcatcacg accacacac	19
<210>	6455	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	

SEQLIST-20480.TXT

<400>	6455	
gtccattcct tgttgtctt c		21
<210>	6456	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6456	
atgccaaaac ccactcagc		19
<210>	6457	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6457	
gccatttttc acagcaacac tatc		24
<210>	6458	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6458	
cttcagtact atctccaacg tc		22
<210>	6459	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6459	
caactgtcac ctgtcacttc		20
<210>	6460	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6460	
gttcttcttg gcagcactac		20
<210>	6461	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6461
ttcatcgcat caacaccac                                19

<210>    6462
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6462
tgccattttc ctaaaaccac tc                            22

<210>    6463
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6463
tcaactttaa gcctaagcag ac                            22

<210>    6464
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6464
gcagctcttt caaagcagca c                             21

<210>    6465
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6465
aaacacgtct agcagcatc                                19

<210>    6466
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6466
tttacctcca atacccaaca ac                            22

<210>    6467

```

```

<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6467
agcatttcct cgcacaac 18

<210> 6468
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6468
cagggacaac aacctgag 19

<210> 6469
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6469
aagcacagaa ggaaagcac 19

<210> 6470
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6470
tacagccata acctttccac attcc 25

<210> 6471
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6471
cctacaatgc ctgcatcac 19

<210> 6472
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6472

```

tgttagtgcgca gctactgaaa ag	SEQLIST-20480.TXT	22
<210> 6473		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6473		
ccaccgtaaa acttgcttgt tc		22
<210> 6474		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6474		
tttaacatat agtgagccgc c		21
<210> 6475		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6475		
acgcaggtaa gcgtaaaact c		21
<210> 6476		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6476		
gaaagacatc agcatactcc tg		22
<210> 6477		
<211> 25		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6477		
cacataatgg aaaactaatg ggagg		25
<210> 6478		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		

```

<223>    Primer
<400>    6478
acagcatcac catagtcacc                                20
<210>    6479
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6479
gcaggatcgc caatatagac                                20
<210>    6480
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6480
cattttgaag cattgagctg ac                            22
<210>    6481
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6481
cagacattat gcacaaaatg cc                            22
<210>    6482
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6482
catcaaagcc aatccacgca c                            21
<210>    6483
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6483
ccacagaatg attccagcag                                20
<210>    6484
<211>    22
<212>    DNA

```

```

<213> Artificial Sequence
<220>
<223> Primer
<400> 6484
gaacttccat tctacttcag cc 22
<210> 6485
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6485
cacatacaaa ctaccacat cac 23
<210> 6486
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6486
tacgcttagc ccaaagctc 19
<210> 6487
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6487
ccttccactc taccatcaaa c 21
<210> 6488
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6488
agcagtgtag gcagcaatca 20
<210> 6489
<211> 35
<212> DNA
<213> Artificial Sequence
<220>
<223> Primer
<400> 6489
tatcgttgct gtagcatgaa cagtacttgc aggag 35

```

SEQLIST-20480.TXT

<210> 6490
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6490
 tccaatagga atgtcgact cataagaagt gtcg 34

 <210> 6491
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6491
 gaagctatta aaatcacatg gggatagcac tact 34

 <210> 6492
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6492
 aaataacaca gaattcacca g 21

 <210> 6493
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6493
 gtaaccattg acttggaat tc 22

 <210> 6494
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 6494
 tgcgagcaag aacaagagag g 21

 <210> 6495
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

<400>	6495		
	catgtgtggc ggctcactat a		21
<210>	6496		
<211>	21		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6496		
	cctctcttgt tcttgctcgc a		21
<210>	6497		
<211>	21		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6497		
	tatagtgagc cgccacacat g		21
<210>	6498		
<211>	24		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6498		
	tcacacttag gatagtccca accc		24
<210>	6499		
<211>	22		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6499		
	tgatgatggg gtttgtgtgt ta		22
<210>	6500		
<211>	24		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	Primer		
<400>	6500		
	ggggtgggac taccctaagt gtga		24
<210>	6501		
<211>	22		
<212>	DNA		
<213>	Artificial Sequence		

```

<220>
<223>    Primer

<400>    6501
taacacacaa acaccatcat ca                                22

<210>    6502
<211>    23
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6502
ggttgggact atcctaagtg tga                                23

<210>    6503
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6503
ccatcatcag atagaatcat cata                                24

<210>    6504
<211>    26
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6504
tcgttagcta acctgtagaa acggtg                                26

<210>    6505
<211>    26
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6505
ttttacgctt acctgcgtaa acattt                                26

<210>    6506
<211>    26
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6506
caccgtttct acaggtagc taacga                                26

<210>    6507
<211>    26

```

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6507	
	aaatgtttac gcaggtaagc gtaaaa	26
<210>	6508	
<211>	17	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6508	
	caacgctgag gtgtgta	17
<210>	6509	
<211>	16	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6509	
	attcgtcacg ttcgtg	16
<210>	6510	
<211>	17	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6510	
	tacacacctc agcgttg	17
<210>	6511	
<211>	16	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6511	
	cacgaacgtg acgaat	16
<210>	6512	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6512	
	aacagttact tggatgcctt	20

SEQLIST-20480.TXT

<210> 6513
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6513
 aaggcatcca agtaactgtt 20

<210> 6514
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6514
 ctatgatggg tttcaaaatg 20

<210> 6515
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6515
 cattttgaaa cccatcatag 20

<210> 6516
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6516
 taaccatgac caacattgcc 20

<210> 6517
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6517
 ggcaatgttg gtcattggtta 20

<210> 6518
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

SEQLIST-20480.TXT

<400>	6518	
	acagctgtgc tcagacaatg	20
<210>	6519	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6519	
	cattgtctga gcacagctgt	20
<210>	6520	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6520	
	agtgaccttg accggtgcac	20
<210>	6521	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6521	
	gtgcaccggt caaggtcact	20
<210>	6522	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6522	
	caataatact gcgtcttggt	20
<210>	6523	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6523	
	accaagacgc agtattattg	20
<210>	6524	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>   Primer

<400>   6524
tgaatacacc caaagaccac                20

<210>   6525
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6525
gtggtctttg ggtgtattca                20

<210>   6526
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6526
cttggcactg atcccattga                20

<210>   6527
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6527
tcaatgggat cagtgccaaag                20

<210>   6528
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6528
gttaacaaac atgcattc                  18

<210>   6529
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Primer

<400>   6529
gaatgcatgt ttgttaac                  18

<210>   6530

```

```

<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6530
aatggcctt ggtatgt 17

<210> 6531
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6531
ccatacatc caaggcca 18

<210> 6532
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6532
gtggtagtga ccttgaccgg tg 22

<210> 6533
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6533
gttcctcctt gccatgctg 19

<210> 6534
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6534
gccttgaata cacccaaaga c 21

<210> 6535
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6535

```

	SEQLIST-20480.TXT	
actcgactcc gcaagggagg		20
<210> 6536		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6536		
ggagtgcacc actgccatgc		20
<210> 6537		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6537		
gtttatcacc cgcaagaag		20
<210> 6538		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6538		
cttcttcgcg ggtgataaac		20
<210> 6539		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6539		
caatgaagta ctttgtcaag a		21
<210> 6540		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 6540		
tcttgacaaa gtacttcatt g		21
<210> 6541		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		


```

<223>    Primer
<400>    6541
caaaggctat caagtgtgtg                                20
<210>    6542
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6542
cacacacttg atagcctttg                                20
<210>    6543
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6543
gttgattggg ctgttgaata                                20
<210>    6544
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6544
tattcaacag accaatcaac                                20
<210>    6545
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6545
ttcttttact attctgaata g                              21
<210>    6546
<211>    21
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer
<400>    6546
ctattcagaa tagtaaaaga a                              21
<210>    6547
<211>    20
<212>    DNA

```

<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6547	
	catccttatac cactcatgta	20
<210>	6548	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6548	
	tacatgagtg gtataagatg	20
<210>	6549	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6549	
	ctacttcac agatacttat	20
<210>	6550	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6550	
	ataagtatct gatgaagtag	20
<210>	6551	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6551	
	atgatttctg ctggatttag	20
<210>	6552	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6552	
	ccagtgagca gaggtagc	18

<210> 6553
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6553
 cgtcactctg ctcactgg 18

<210> 6554
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6554
 gaggactcga gctcaagc 18

<210> 6555
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6555
 gcttgagctc gagtcctc 18

<210> 6556
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6556
 tgagtaccga cagtacttgg 20

<210> 6557
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6557
 tcgctgctaa tactgtaatc 20

<210> 6558
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400>	6558	
actttctcga gctcgctatg		20
<210>	6559	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6559	
caacatgtcc atccttacac		20
<210>	6560	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6560	
acccaatca aaccaacgta gtg		23
<210>	6561	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6561	
cggtagtagc caatttggtc atc		23
<210>	6562	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6562	
atgaattacc aagtcaatgg ttac		24
<210>	6563	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	6563	
ctgtagaaaa tcctagctgg ag		22
<210>	6564	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	

SEQLIST-20480.TXT

```

<220>
<223>    Primer

<400>    6564
gaagctattc gtcacgttcg                                20

<210>    6565
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6565
cataaccagt cggtagacct ac                            22

<210>    6566
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6566
tcgtgcgtgg attggctttg atgt                          24

<210>    6567
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6567
ctctagttgc atgacagccc tc                            22

<210>    6568
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    Primer

<400>    6568
ttatcacccg cgaagaagct                                20

<210>    6569
<211>    306
<212>    PRT
<213>    SARS coronavirus

<400>    6569
Ser Gly Phe Arg Lys Met Ala Phe Pro Ser Gly Lys Val Glu Gly Cys
1      5      10      15
Met Val Gln Val Thr Cys Gly Thr Thr Thr Leu Asn Gly Leu Trp Leu
      20      25      30
Asp Asp Thr Val Tyr Cys Pro Arg His Val Ile Cys Thr Ala Glu Asp

```

SEQLIST-20480.TXT

```

35                               40                               45
Met Leu Asn Pro Asn Tyr Glu Asp Leu Leu Ile Arg Lys Ser Asn His
 50 55 60
Ser Phe Leu Val Gln Ala Gly Asn Val Gln Leu Arg Val Ile Gly His
65 70 75 80
Ser Met Gln Asn Cys Leu Leu Arg Leu Lys Val Asp Thr Ser Asn Pro
85 90 95
Lys Thr Pro Lys Tyr Lys Phe Val Arg Ile Gln Pro Gly Gln Thr Phe
100 105 110
Ser Val Leu Ala Cys Tyr Asn Gly Ser Pro Ser Gly Val Tyr Gln Cys
115 120 125
Ala Met Arg Pro Asn His Thr Ile Lys Gly Ser Phe Leu Asn Gly Ser
130 135 140
Cys Gly Ser Val Gly Phe Asn Ile Asp Tyr Asp Cys Val Ser Phe Cys
145 150 155 160
Tyr Met His His Met Glu Leu Pro Thr Gly Val His Ala Gly Thr Asp
165 170 175
Leu Glu Gly Lys Phe Tyr Gly Pro Phe Val Asp Arg Gln Thr Ala Gln
180 185 190
Ala Ala Gly Thr Asp Thr Thr Ile Thr Leu Asn Val Leu Ala Trp Leu
195 200 205
Tyr Ala Ala Val Ile Asn Gly Asp Arg Trp Phe Leu Asn Arg Phe Thr
210 215 220
Thr Thr Leu Asn Asp Phe Asn Leu Val Ala Met Lys Tyr Asn Tyr Glu
225 230 235 240
Pro Leu Thr Gln Asp His Val Asp Ile Leu Gly Pro Leu Ser Ala Gln
245 250 255
Thr Gly Ile Ala Val Leu Asp Met Cys Ala Ala Leu Lys Glu Leu Leu
260 265 270
Gln Asn Gly Met Asn Gly Arg Thr Ile Leu Gly Ser Thr Ile Leu Glu
275 280 285
Asp Glu Phe Thr Pro Phe Asp Val Val Arg Gln Cys Ser Gly Val Thr
290 295 300

```

Phe Gln
305

<210> 6570
 <211> 307
 <212> PRT
 <213> Avian infectious bronchitis virus

<400> 6570
 Ser Gly Phe Lys Lys Leu Val Ser Pro Ser Ser Ala Val Glu Lys Cys
 1 5 10 15

Ile Val Ser Val Ser Tyr Arg Gly Asn Asn Leu Asn Gly Leu Trp Leu

30

Page 1233

SEQLIST-20480.TXT

1		5		10		15
Ile	Val	Ser	Val	Thr	Tyr	Gly
			20			Asn
						Met
						25
						Thr
						Leu
						Asn
						Gly
						Leu
						30
						Trp
						Leu
Asp	Asp	Lys	Val	Tyr	Cys	Pro
		35				Arg
						40
						His
						Val
						Ile
						Cys
						45
						Ser
						Ser
						Ala
						Asp
Met	Thr	Asp	Pro	Asp	Tyr	Pro
						55
						Asn
						Leu
						Leu
						Cys
						60
						Arg
						Val
						Thr
						Ser
						Ser
Asp	Phe	Cys	Val	Met	Ser	Gly
						70
						Arg
						Met
						Ser
						75
						Leu
						Thr
						Val
						Met
						Ser
						80
						Tyr
Gln	Met	Gln	Gly	Cys	Gln	Leu
						85
						Val
						Leu
						Thr
						90
						Val
						Thr
						Leu
						Gln
						95
						Asn
						Pro
Asn	Thr	Pro	Lys	Tyr	Ser	Phe
						100
						Gly
						Val
						105
						Val
						Val
						Lys
						Pro
						Gly
						110
						Glu
						Thr
						Phe
Thr	Val	Leu	Ala	Ala	Tyr	Asn
						115
						Gly
						120
						Arg
						Pro
						Gln
						Gly
						125
						Ala
						Phe
						His
						Val
Thr	Leu	Arg	Ser	Ser	His	Thr
						130
						135
						Ile
						Lys
						Gly
						Ser
						140
						Phe
						Leu
						Cys
						Gly
						Ser
Cys	Gly	Ser	Val	Gly	Tyr	Val
						145
						150
						Leu
						Thr
						Gly
						155
						Ser
						Val
						Arg
						Phe
						Val
						160
Tyr	Met	His	Gln	Leu	Glu	Leu
						165
						Ser
						Thr
						Gly
						170
						Cys
						His
						Thr
						Gly
						175
						Thr
						Asp
Phe	Ser	Gly	Asn	Phe	Tyr	Gly
						180
						Pro
						Tyr
						185
						Arg
						Asp
						Ala
						Gln
						190
						Val
						Val
						200
						Gln
						Thr
						Val
						Asn
						Val
						205
						Ala
						Trp
						Leu
Leu	Pro	Val	Gln	Asp	Tyr	Thr
						195
						200
						Gln
						Thr
						Val
						Asn
						Val
						205
						Ala
						Trp
						Leu
Tyr	Ala	Ala	Ile	Phe	Asn	Arg
						210
						215
						Cys
						Asn
						Trp
						Ala
						Met
						225
						Thr
						Asn
						Gly
						Phe
						240
						Ser
Cys	Ser	Leu	Glu	Glu	Phe	Asn
						230
						Val
						Trp
						Ala
						Met
						235
						Thr
						Asn
						Gly
						Phe
						240
						Ser
Ser	Ile	Lys	Ala	Asp	Leu	Val
						245
						Leu
						Val
						Leu
						Asp
						250
						Ala
						Leu
						Ala
						Ser
						Met
						255
						Thr
						Gly
Val	Thr	Val	Glu	Gln	Val	Leu
						260
						Ala
						265
						Ile
						Lys
						Arg
						Leu
						His
						270
						Ser
						Gly
Phe	Gln	Gly	Lys	Gln	Ile	Leu
						275
						Gly
						280
						Ser
						Cys
						Val
						Leu
						Glu
						285
						Asp
						Glu
						Leu
Thr	Pro	Ser	Asp	Val	Tyr	Gln
						290
						295
						Gln
						Gln
						Leu
						Ala
						Gly
						Val
						300
						Lys
						Leu
						Gln

<210> 6572
 <211> 303
 <212> PRT
 <213> Bovine coronavirus

<400> 6572
 Ser Gly Ile Val Lys Met Val Asn Pro Thr Ser Lys Val Glu Pro Cys

SEQLIST-20480.TXT

1	5	10	15
Ile Val Ser Val Thr Tyr Gly Asn Met Thr Leu Asn Gly Leu Trp Leu	20	25	30
Asp Asp Lys Val Tyr Cys Pro Arg His Val Ile Cys Ser Ala Ser Asp	35	40	45
Met Thr Asn Pro Asp Tyr Thr Asn Leu Leu Cys Arg Val Thr Ser Ser	50	55	60
Asp Phe Thr Val Leu Phe Asp Arg Leu Ser Leu Thr Val Met Ser Tyr	65	70	75
Gln Met Gln Gly Cys Met Leu Val Leu Thr Val Thr Leu Gln Asn Ser	85	90	95
Arg Thr Pro Lys Tyr Thr Phe Gly Val Val Lys Pro Gly Glu Thr Phe	100	105	110
Thr Val Leu Ala Ala Tyr Asn Gly Lys Pro Gln Gly Ala Phe His Val	115	120	125
Thr Met Arg Ser Ser Tyr Thr Ile Lys Gly Ser Phe Leu Cys Gly Ser	130	135	140
Cys Gly Ser Val Gly Tyr Val Leu Met Gly Asp Cys Val Lys Phe Val	145	150	155
Tyr Met His Gln Leu Glu Leu Ser Thr Gly Cys His Thr Gly Thr Asp	165	170	175
Phe Asn Gly Asp Phe Tyr Gly Pro Tyr Lys Asp Ala Gln Val Val Gln	180	185	190
Leu Pro Val Gln Asp Tyr Ile Gln Ser Val Asn Phe Val Ala Trp Leu	195	200	205
Tyr Ala Ala Ile Leu Asn Asn Cys Asn Trp Phe Val Gln Ser Asp Lys	210	215	220
Cys Ser Val Glu Asp Phe Asn Val Trp Ala Leu Ser Asn Gly Phe Ser	225	230	235
Gln Val Lys Ser Asp Leu Val Ile Asp Ala Leu Ala Ser Met Thr Gly	245	250	255
Val Ser Leu Glu Thr Leu Leu Ala Ala Ile Lys Arg Leu Lys Asn Gly	260	265	270
Phe Gln Gly Arg Gln Ile Met Gly Ser Cys Ser Phe Glu Asp Glu Leu	275	280	285
Thr Pro Ser Asp Val Tyr Gln Gln Leu Ala Gly Ile Lys Leu Gln	290	295	300

<210> 6573
 <211> 297
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Consensus sequence

SEQLIST-20480.TXT

```

<400> 6573
Ser Gly Ile Val Lys Met Val Ser Pro Ser Ser Lys Val Glu Pro Cys
1      5      10      15
Ile Val Ser Val Thr Tyr Gly Asn Met Thr Leu Asn Gly Leu Trp Leu
20      25      30
Asp Asp Lys Val Tyr Cys Pro Arg His Val Ile Cys Ser Ala Ala Asp
35      40      45
Met Thr Asn Pro Asp Tyr Asn Leu Leu Cys Arg Val Thr Ser Ser Asp
50      55      60
Phe Val Leu Ser Gly Arg Val Ser Leu Thr Val Met Ser Tyr Gln Met
65      70      75      80
Gln Gly Cys Leu Leu Val Leu Thr Val Thr Leu Gln Asn Pro Lys Thr
85      90      95
Pro Lys Tyr Lys Phe Gly Val Val Lys Pro Gly Glu Thr Phe Thr Val
100     105     110
Leu Ala Ala Tyr Asn Gly Ser Pro Gln Gly Ala Phe His Val Thr Met
115     120     125
Arg Ser Ser His Thr Ile Lys Gly Ser Phe Leu Cys Gly Ser Cys Gly
130     135     140
Ser Val Gly Phe Val Ile Asp Gly Asp Cys Val Lys Phe Val Tyr Met
145     150     155     160
His Gln Leu Glu Leu Ser Thr Gly Cys His Thr Gly Thr Asp Leu Gly
165     170     175
Asp Phe Tyr Gly Pro Tyr Val Asp Ala Gln Val Val Gln Leu Pro Val
180     185     190
Gln Asp Tyr Thr Gln Thr Val Asn Val Val Ala Trp Leu Tyr Ala Ala
195     200     205
Ile Ile Asn Cys Asn Trp Phe Leu Gln Ser Asp Thr Cys Ser Leu Glu
210     215     220
Asp Phe Asn Val Trp Ala Met Ser Asn Gly Phe Ser Pro Ile Lys Ser
225     230     235     240
Asp Leu Val Ile Asp Ala Leu Ala Ala Met Thr Gly Val Ser Val Glu
245     250     255
Leu Leu Ala Ala Ile Lys Arg Leu Ser Gly Phe Gln Gly Arg Gln Ile
260     265     270
Leu Gly Ser Cys Ile Leu Glu Asp Glu Leu Thr Pro Ser Asp Val Tyr
275     280     285
Gln Gln Leu Ala Gly Val Lys Leu Gln
290     295

```

```

<210> 6574
<211> 8
<212> RNA
<213> SARS coronavirus

```

SEQLIST-20480.TXT

<400>	6574						
ucumaacu							8
<210>	6575						
<211>	7						
<212>	RNA						
<213>	SARS coronavirus						
<400>	6575						
ucuaaac							7
<210>	6576						
<211>	7						
<212>	RNA						
<213>	SARS coronavirus						
<400>	6576						
cukaaca							7
<210>	6577						
<211>	6						
<212>	RNA						
<213>	SARS coronavirus						
<400>	6577						
acgaac							6
<210>	6578						
<211>	10077						
<212>	DNA						
<213>	Artificial Sequence						
<220>							
<223>	Expression plasmid						
<400>	6578						
tcgcgcggtt	cggatgatgac	ggtgaaaacc	tctgacacat	gcagctcccg	gagacgggtca		60
cagcttgtct	gtaagcggat	gccgggagca	gacaagcccg	tcagggcgcg	tcagcgggtg		120
ttggcgggtg	tcggggctgg	cttaactatg	cggcattcaga	gcagattgta	ctgagagtgc		180
accatatgaa	gctttttgca	aaagcctagg	cctccaaaaa	agcctcctca	ctacttctgg		240
aatagctcag	aggccgaggg	ggcctcggcc	tctgcataaa	taaaaaaaat	tagtcagcca		300
tggggcgagg	aatgggcgga	actgggcggg	gaggggaatta	ttggctattg	gccattgcat		360
acgttgatc	tatatcataa	tatgtacatt	tatatgtggct	catgtccaat	atgaccgcca		420
tgttgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacgggggc	attagttcat		480
agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccgc	tggctgaccg		540
cccaacgacc	cccggccatt	gacgtcaata	atgacgtatg	ttcccatagt	aacgccaata		600
gggactttcc	attgacgtca	atgggtggag	tattttacgg	aaactgcccc	cttggcagta		660
catcaagtgt	atcatatgcc	aagtccgccc	cctattgacg	tcaatgacgg	taaatggccc		720
gcctggcatt	atgcccagta	catgacctta	cgggactttc	ctacttggca	gtacatctac		780
gtattagtca	tcgctattac	catggtgatg	cggttttggc	agtacaccaa	tgggcgtgga		840
tagcggtttg	actcacgggg	atttccaagt	ctccacccca	ttgacgtcaa	tgggagtttg		900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgta	ataaccccg	cccgttgacg		960
caaattggcg	gtaggcgtgt	acgggtgggag	gtctatataa	gcagagctcg	tttagtgaac		1020
cgtcagatcg	cctggagacg	ccatccacgc	tgttttgacc	tccatagaag	acaccgggac		1080
cgatccagcc	tccgcggccg	ggaacggtgc	attggaacgc	ggattccccg	tgccaagagt		1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggctcttat	gcatgctata		1200
ctgttttttg	cttggggcct	atacaccccc	gctccttatg	ctataggtga	tggtatagct		1260
tagcctatag	gtgtgggtta	ttgaccatta	ttgaccactc	ccctattggg	gacgatactt		1320
tccattacta	atccataa	tggctctttg	ccacaactat	ctctattggc	tatatgcca		1380
tactctgtcc	ttcagagact	gacacggact	ctgtattttt	acaggatggg	gtccatttat		1440
tatttacaaa	ttcacatata	caacaacgcc	gtcccccg	cccgcagttt	ttattaaaca		1500
tagcgtggga	tctccgacat	ctcgggtacg	tgttccggac	atgggctctt	ctccggtagc		1560

SEQLIST-20480.TXT

ggcggagcct	ccacatccga	gccctggtcc	catccgtcca	gcggctcatg	gtcgcctcggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtgtgccgc	acaaggccgt	ggcggtaggg	tatgtgtctg	aaaatgagct	cggagattgg	1740
gctcgcacct	ggacgcagat	ggaagactta	aggcagcggc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccgt	tgcggtgctg	ttaacgggtgg	1860
agggcagtgt	agtctgagca	gtactcgttg	ctgccgcgcg	cgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgctcgaccgg	1980
tcgcgaattc	gtacgatatc	ggcgcgcctc	gaggtcgaag	gcgcgcgcgc	accatgttca	2040
tcttcctgct	gttcctgact	ctcactagtgt	gtagtgcctt	tgaccgggtgc	accacttttg	2100
atgatgttca	agctcctaata	tacactcaac	atacttcatc	tatgaggggg	gtttactatc	2160
ctgatgaaat	tttttagatca	gacactcctt	atttaactca	ggattttatt	cttccatttt	2220
attctaatgt	tacagggttt	catactatta	atcatacgtt	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tatttatttt	gctgccacag	agaaatcaaa	tgttgtccgt	ggttgggttt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaacaat	tctactaatg	2400
ttgttatacg	agcatgtaac	tttgaattgt	gtgacaaccc	tttctttgct	gtttctaaac	2460
ccatgggtac	acagacacat	actatgatat	tcgataatgc	attttaattgc	actttcgagt	2520
acatatctga	agaggtttcg	cttgatgttt	cagaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaaccta	2640
tagatgtagt	tcgtgatcta	ccttctggtt	ttaacacttt	gaaacctatt	tttaagttgc	2700
ctcttggtat	taacattaca	aatttttagag	ccattcttac	agccttttca	cctgctcaag	2760
acatttgggg	gcagcctatt	gcagcctatt	ttgttggcta	tttaaagcca	actacattta	2820
tgctcaagta	tgatgaaaat	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgctgaact	caaagtctct	gttaagagct	ttgagattga	caaaggaatt	taccagacct	2940
ctaatttcag	ggttgttccc	tcaggagatg	ttgtgagatt	ccctaataat	acaaacttgt	3000
gtccttttgg	taaggttttt	aatgtcacta	aattcccctt	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtgtt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
cctttaagtg	ctatggcggt	tctgccacta	agttaagata	tctttgcttc	tccaatgtct	3180
atgcagattc	ttttgtagtc	aagggagatg	atgtaagaca	aatagcgcca	gggcaaactg	3240
gtgttatgtc	tactgttgac	tataaattgc	atttgccttt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tataggtatc	3360
ttagacatgg	caagcttagg	ccctttgaga	gagacatatc	taatgtgcct	ttctcccctg	3420
atggcaaacc	ttgcacccca	cctgctctta	attgttattg	gccattaaat	gattatgggt	3480
tttacaccac	tgactgttgc	ggctaccaac	tgtagtactt	tgtagtactt	tcttttgaa	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	cactgacctt	attaagaacc	3600
agtgtgtcaa	ttttaatttt	aatggactca	ctgggtactg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttcaa	caatttgccc	gtgatgtttc	tgatttcact	gattccgttc	3720
gagatcttaa	aacatctgaa	atattagaca	tttcaacttg	ctcttttggg	gggtgtaagt	3780
taattacacc	tggaacaaat	gcttcatctg	aagttgctgt	tctatatcaa	gatgttaact	3840
gcactgatgt	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caatgtattc	cagactcaag	caggctgtct	tataggagct	gagcatgtcg	3960
acactcttta	tgagtgtgac	attcctattg	gagctggcat	ttgtgctagt	taccatacag	4020
tttctttatt	acgtagtact	agccaaaaat	ctattgtggc	ttatactatg	tctttagggtg	4080
ctgatagttc	aattgcttac	tctaataaca	ccattgctat	acctactaac	ttttcaatta	4140
gcattactac	agaagtaatg	cctgtttcta	tggctaaaac	ctccgtagat	tgtaatatgt	4200
acatctcgcg	gaatgtgcta	aatgtgctta	atttgccttc	ccaatatggt	agcttttgca	4260
cacaactaaa	tcgtgcactc	tcagggtattg	ctgctgaaca	ggatcgcaac	acacgtgaag	4320
tgttcgcctca	agtcaaacaa	atgtacaaaa	ccccaaactt	gaaatatatt	ggtgggttta	4380
atttttcaca	aatattacct	gaccctctaa	agccaaactaa	gaggtctttt	attgaggact	4440
tgctctttaa	taaggtgaca	ctcgtgatg	ctggcttcat	gaagcaatat	ggcgaatgcc	4500
taggtgatat	taatgctaga	gatctcattt	gtgcgcagaa	gttcaatgga	cttacagtgt	4560
tgccacctct	gctcactgat	gatatgattg	ctgcctacac	tgctgtctta	gttagtggtta	4620
ctgccactgc	tggatggaca	tttgggtgctg	gcgctgtctt	tcaaataacct	tttgcctatgc	4680
aaatggcata	taggttcaat	ggcattggag	ttacccaaaa	tgttctctat	gagaaccaaa	4740
aacaaatcgc	caaccaattt	aacaaggcga	ttagtcaaat	tcaagaatca	cttacaacaa	4800
catcaactgc	attgggcaag	ctgcaagacg	ttgttaacca	gaatgtctaa	gcattaaaca	4860
cacttggttaa	acaacttagc	tctaattttg	gtgcaatttc	aagtgtgcta	aatgatattc	4920
tttcgcgact	tgataaaagtc	gaggcggagg	tacaaattga	cagggttaatt	acaggcagac	4980
ttcaaagcct	tcaaacctat	gtaacacaac	aactaatcag	ggctgtctgaa	atcagggctt	5040
ctgctaattct	tgctgtactt	aaaatgtctg	agtgtgttct	tggacaatca	aaaagagttg	5100
acttttgtgg	aaagggctac	caccttatgt	ccttcccaca	agcagccccg	catgggtgtg	5160
tcttcctaca	gtcacgtatg	gtgccatccc	agggaaggaa	cttcaccaca	gcgcagcaga	5220
tttgtcatga	aggcaaagca	tacttccctc	gtgaagggtgt	ttttgtgttt	aatggcactt	5280
cttgggtttat	tacacagagg	aacttctttt	ctccacaaat	aattactaca	gacaatacat	5340

SEQLIST-20480.TXT

ttgtctcagg	aaattgtgat	gtcgttattg	gcatcattaa	caacacagtt	tatgatcctc	5400
tgcaacctga	gcttgactca	ttcaaagaag	agctggacaa	gtacttcaaa	aatcatacat	5460
caccagatgt	tgattttggc	gacatttcag	gcattaacgc	ttctgtcgtc	aacattcaaa	5520
aagaaattga	ccgcctcaat	gaggtcgcta	aaaatttaaa	tgaatcactc	attgaccttc	5580
aagaattggg	aaaatatgag	caatatatta	aatggccttg	gtatgtttgg	ctcggcttca	5640
ttgtctggact	aattgccatc	gtcatggtta	caatcttgct	ttgttgcattg	actagtgtgt	5700
gcagttgcct	caaggggtgca	tgctcttggtg	gttcttgctg	caagtttgat	gaggatgact	5760
ctgagccagt	tctcaaggggt	gtcaaattac	attacacaca	ccaccaccac	caccactaat	5820
cgatgcggcc	gcattcgatag	atctcccggg	tctagaggga	gaccacaacg	gtttccctct	5880
agcgggatca	attccgcccc	ccccctaac	gttactggcc	gaagccgctt	ggaataaggc	5940
cgggtgtcgt	ttgtctatat	gttattttcc	accatattgc	cgctttttgg	caatgtgagg	6000
gcccggaaac	ctggccctgt	cttcttgacg	agcattcccta	ggggcttttc	ccctctcgcc	6060
aaaggaatgc	aaggtctgtg	gaatgtcgtg	aggaatgcag	ttcctcttga	agcttcttga	6120
agacaaacaa	cgctctgtagc	gaccctttgc	aggcagcgga	acccccacc	tggcgacagg	6180
tgccctctgcg	gccaaaagcc	acgtgtataa	gatacacctg	caaaggcggc	acaacccag	6240
tggcacgttg	tgagttggat	agttgtggaa	agagtcaaat	ggctctcttc	aagcgtattc	6300
aacaagatgc	gcattcgatgc	ccagaaggta	ccccattgta	tgggatctga	tctggggcct	6360
cgggtgcacat	gctttacatg	tgtttagtcg	agggttaaaaa	acgtctaggc	ccccgaacc	6420
acggggacgt	ggttttccctt	tgaaaaacac	gataatacca	tggttcgacc	attgaactgc	6480
atcgctcgccg	tgtcccaaaa	tatggggatt	ggcaagaacg	gagacctacc	ctggcctccg	6540
ctcaggaatgc	gttccaaaga	cttccaaaga	atgaccacaa	cctcttcagt	ggaaggtaaa	6600
cagaatctg	tgattatggg	taggaaaacc	tggttctcca	ttcctgagaa	gaatcgacct	6660
ttaaaggaca	gaattaatat	agttctcagt	agagaactca	aagaaccacc	acgaggagct	6720
cattttcttg	ccaaaagttt	ggatgatgcc	ttaagactta	ttgaacaacc	ggaattggca	6780
agtaaagtgc	aattggtttg	gatagtcgga	ggcagttctg	ttaccagga	agccatgaat	6840
caaccaggcc	acctcagact	ctttgtgaca	aggatcatgc	aggaatttga	aagtgcacag	6900
tttttccag	aaattgattt	ggggaaatat	aaacttctcc	cagaataccc	aggcgtcctc	6960
tctgaggtcc	aggaggaaaa	aggcatcaag	tataagtttg	aagtctacga	gaagaaagac	7020
ggaggaggat	ccatgattga	acaagatgga	ttgacacgag	gttctccggc	cgcttgggtg	7080
gagaggctat	tcggctatga	ctgggcacaa	cagacaatcg	gctgctctga	tgccgcctg	7140
ttccggctgt	cagcgcaggg	gcgcccgggt	ctttttgtca	agaccgacct	gtccgggtgc	7200
ctgaatgaac	tgaggagcga	ggcagcgcg	ctatcgtggc	tggccacgac	gggcgttcc	7260
tgcgacgtg	aggatctcct	gtcactctac	gcgggaagg	actggctgct	attgggcatg	7320
gtgcccgggc	tgccggcggt	gcatacgctt	cttgctcctg	ccgagaaagt	atccatcatg	7380
gctgatgcaa	gcatacgagc	agcaggtact	gatccggcta	cctgccccatt	cgaccacca	7440
gcgaaacatc	gcattcgagc	ggggctcgcg	cggatggaa	ccgggtctt	cgatcaggat	7500
gatctggagc	acggtcgagc	ttctgtcgtg	ccagccgaac	tgcttcgcca	gctcaaggcg	7560
cgcatgcccc	acggcgagga	ttctgtgatt	acccatggcg	atgcctgctt	gccgaatatc	7620
atggtgga	atggccgctt	ggctacccgt	atcgactgtg	gccggctggg	tgtggcgagc	7680
cgctatcagg	acatagcggt	ttctgtgatt	gataattgct	aagagcttgg	cggcggaatg	7740
gctgacggct	ttctgcggtt	ttacgggtat	gcccgtcccg	attcgacgcg	catcgccctt	7800
tatcgccctt	ttgacgagtt	cttctgagga	ttcactacgc	gttagagctc	gctgatcagc	7860
ctcgaactgt	ccttctagtt	gccagccatc	tggtgtttgc	ccctcccccg	tgcccttcc	7920
gaccctggaa	ggtgccactc	ccactgtcct	ttcctaataa	aatgaggaaa	ttgcatcgca	7980
ttgtctgagt	aggtgtcatt	ctattctggg	gggtgggggt	gggcaggaca	gcaaggggga	8040
ggattgggaa	gacaatagca	ggcatgctgg	ggagctcttc	cgcttccctc	ctcactgact	8100
cgctgcgctc	ggtcgttcgg	ctgcggcgag	cggatcacgc	tactcaaaag	gcggtaatac	8160
ggttatccac	agaatcaggg	gataacgcag	gaaagaacat	gtgagcaaaa	ggccagcaaa	8220
aggccaggaa	ccgtaaaaag	gcccgcgttg	tgccgttttt	ccataggctc	cgccccctg	8280
acgagcatca	caaaaatcga	cgctcaagtc	agagggtggc	aaacccgaca	ggactataaa	8340
gataccaggc	gtttccccct	ggaagctccc	tcgtgcgctc	tcctgttccg	accctgccgc	8400
ttaccggata	cctgtccgcc	tttctccctt	cgggaagcgt	ggcgctttct	caatgctcac	8460
gctgtaggta	tctcagttcg	gtgtaggctg	ttcgtcccaa	gctgggctgt	gtgcacgaac	8520
ccccggttca	gccccaccgc	tgcgccctat	ccggtaacta	tcgtcttgag	tccaacccgg	8580
taagacacga	cttatcgcca	ctggcagcag	ccactggtaa	caggattagc	agagcgagg	8640
atgtaggcgg	tgctacagag	ttcttgaagt	gggtggcctaa	ctacggctac	actagaagga	8700
cagtattttg	tatctgcgct	ctgctgaagc	cagttacctt	cggaataaaga	gttggtagct	8760
cttgatccgg	caaacaaacc	accgctggta	gcgggtggtt	ttttgtttgc	aagcagcaga	8820
ttacgcgcag	aaaaaaagga	tctcaagaag	atcctttgat	cttttctacg	gggtctgacg	8880
ctcagtgga	cgaaaactca	cgtaaggga	ttttggtcat	gagattatca	aaaaggatct	8940
tcacctagat	ccttttaaat	taaaaatgaa	gttttaaatc	aatctaaagt	atatatgagt	9000
aaacttggct	tgacagttac	caatgcttaa	tcagttaggc	acctatctca	gcgatctgtc	9060
tatttcgttc	atccatagtt	gcctgactcc	ccgtcgtgta	gataactacg	atacgggagg	9120

SEQLIST-20480.TXT

gcttaccatc	tggccccagt	gctgcaatga	taccgcgaga	cccacgctca	ccggctccag	9180
atztatcagc	aataaaccag	ccagccggaa	gggcccagcg	cagaagtggg	cctgcaactt	9240
tatccgcctc	catccagctc	attaattgtt	gccgggaagc	tagagtaagt	agttcgccag	9300
tttaattgtt	gcgcaacggt	gttgccattg	ctacagggat	cgtgggtgtc	cgctcgtcgt	9360
ttggatggc	ttcattcagc	tccggttccc	aacgatcaag	gcgagttaca	tgatccccc	9420
tgttgtgcaa	aaaagcgggt	agctccttcg	gtcctccgat	cgttgctcaga	agtaagttag	9480
ccgcagtgtt	atcactcatg	gttatggcag	cactgcataa	ttctcttact	gtcatgccat	9540
ccgtaagatg	cttttctgtg	actgggtgag	actcaaccaa	gtcattctga	gaatagtgtg	9600
tgccggcgacc	gagttgctct	tgcccggcgt	caatacggga	taataccgcg	ccacatagca	9660
gaactttaaa	agtgtctatc	attggaaaac	gttcttcggg	gcgaaaactc	tcaaggatct	9720
taccgctgtt	gagatccagt	tcgatgtaac	ccactcgtgc	acccaactga	tcttcagcat	9780
cttttacttt	caccagcgtt	tctgggtgag	caaaaacagg	aaggcaaaat	gccgcaaaaa	9840
agggcaataa	ggcgacacgg	aaatgttgaa	tactcatact	cttccttttt	caatattatt	9900
gaagcattta	tcagggttat	tgctctcatg	gcggatacat	atttgaatgt	atttagaaaa	9960
ataaacaat	aggggttccg	cgcacatttc	cccgaagagt	gccacctgac	gtctaagaaa	10020
ccattattat	catgacatta	acctataaaa	ataggcgat	cacgaggccc	tttcgtc	10077

<210> 6579
 <211> 10054
 <212> DNA
 <213> Expression plasmid

<400> 6579						
tcgcgcggtt	cgggtgatgac	ggtgaaaacc	tctgacacat	gcagctcccc	gagacgggtca	60
cagcttgtct	gtaagcggat	gccgggagca	gacaagcccc	tcagggcgcg	tcagcgggtg	120
ttggcgggtg	tcggggctgg	cttaactatg	cggcatacaga	gcagattgta	ctgagagtgc	180
accatatgaa	gctttttgca	aaagcctagg	cctccaaaaa	agcctcctca	ctacttcttg	240
aatagctcag	aggccgaggc	ggcctcggcc	tctgcataaa	taaaaaaaat	tagtcagcca	300
tggggcggag	aatgggcgga	actgggcggg	gaggggaatta	ttggctattg	gccattgcat	360
acgttgtatc	tatatcataa	tatgtacatt	tatatggct	catgtccaat	atgaccgcca	420
tgttgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacgggggtc	attagttcat	480
agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccgcg	tggttgaccg	540
cccaacgacc	cccgccatt	gacgtcaata	atgacgatag	ttcccatagt	aacgccaaat	600
gggactttcc	attgacgtca	atgggtggag	tattttacgg	aaactgcccc	cttggcagta	660
catcaagtgt	atcatatgcc	aagtccgccc	cctattgacg	tcaatgacgg	taaatggccc	720
gcctggcatt	atgcccagta	catgacctta	cgggactttc	ctacttggca	gtacatctac	780
gtattagttc	tcgctattac	catgggtgatt	cgggttttggc	agtacaccaa	tgggcgtgga	840
tagcggtttg	actcacgggg	atttccaagt	ctccaccccc	ttgacgtcaa	tgggagtttg	900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgta	ataacccccg	cccgttgacg	960
caaatgggcg	gtaggcgtgt	acgggtggag	gtctatataa	gcagagctcg	tttagtgaac	1020
cgtcagatcg	cctggagacg	ccatccacgc	tgtttttgacc	tccatagaag	acaccgggac	1080
cgatccagcc	tccgcggccg	ggaacggtgc	attggaacgc	ggattccccg	tgccaagagt	1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggctcttat	gcatgtctata	1200
ctgttttttg	cttggggcct	atacaccccc	gctccttatg	ctataggtga	tggtatagct	1260
tagcctatag	gtgtgggtta	ttgaccatta	ttgaccactc	ccctattggg	gacgatactt	1320
tccattacta	atccataaca	tggtctcttg	ccacaactat	ctctattggc	tatatgccaa	1380
tactctgtcc	ttcagagact	gacacggact	ctgtattttt	acaggatggg	gtccattttat	1440
tattttacaaa	ttcacatata	caacaacgcc	gtcccccggt	cccgcagttt	ttattaaaca	1500
tagcgtggga	tctccgacat	ctcgggtacg	tgttccggac	atgggctctt	ctccggtagc	1560
ggcggagctt	ccacatccga	gccctgggtcc	catccgtcca	gcggctcatg	gtcgtcggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtgtgccgc	acaaggccgt	ggcggtaggg	tatgtgtctg	aaaatgagct	cggagattgg	1740
gctcgcacct	ggacgcagat	ggaagactta	aggcagcggc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccg	tgcggtgctg	ttaacgggtg	1860
agggcagtg	agtctgagca	gtactcgttg	ctgccgcgcg	cgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgtcgaccgg	1980
tcgcgaattc	gtacgatatc	ggcgcgcctc	gaggtcgaag	gcgcgccgcc	accatgttca	2040
tcttctgtct	gttcttgact	ctcactagtg	gtagtgcact	tgaccgggtg	accacttttg	2100
atgatgttca	agctccta	tacactcaac	atacttcatc	tatgaggggg	gtttactatc	2160
ctgatgaaat	ttttagatca	gacactcttt	atttaactca	ggattttatt	cttccatttt	2220
attctaattg	tacagggttt	catactatta	atcatacgtt	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tattttattt	gctgccacag	agaaatcaaa	tggtgtccgt	ggttggtgtt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaacaat	tctactaatg	2400

SEQLIST-20480.TXT

ttgttatacg	agcatgtaac	tttgaattgt	gtgacaaccc	tttcttttgc	gtttctaaac	2460
ccatgggtac	acagacacat	actatgatat	tcgataatgc	attttaattgc	acttttcgagt	2520
acatatctga	tgcctttttcg	cttgatgttt	cagaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaaccta	2640
tagatgtagt	tcgtgatcta	ccttcttggt	ttaacacttt	gaaacctatt	tttaagttgc	2700
ctcttggtat	taacattaca	aatttttagag	ccattcttac	agccttttca	cctgctcaag	2760
acatttgagg	cacgtcagct	gcagcctatt	ttgttggtta	tttaaagcca	actacattta	2820
tgctcaagta	tgatgaaaa	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgctgaact	caaagtctct	gttaagagct	ttgagattga	caaaggaatt	taccagacct	2940
ctaatttcag	ggttgttccc	tcaggagatg	ttgtgagatt	ccctaataatt	acaaacttgt	3000
gtcctttttg	agagggttttt	aatgctacta	aattcccttc	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtggt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
cctttaagtgc	taattggcgt	tctgccacta	agttgaatga	tctttgtctc	tccaatgtct	3180
atgcagattc	ttttgtagtc	aaggagatg	atgtaaagaca	aatagcgcca	gggcaaaactg	3240
gtgttattgc	tgattataat	tataaattgc	cagatgattt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tataggtatc	3360
ttagacattg	tttagctagg	ccctttgaga	gagacattac	taatgtgcct	ttctccctcg	3420
atggcaaac	ttgcacccca	cctgctctta	attgttattg	gccattaaat	gattatgggt	3480
tttacaccac	tactggcatt	ggctaccaac	cttacagagt	tgtagtactt	tcttttgaac	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	cactgacctt	attaagaacc	3600
agtgtgtcaa	gcttaatttt	aatggactca	ctgggtactg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttcaa	caattttggc	gtgagtgttc	tgatttcaact	gattccgttc	3720
gagatcctaa	aacatctgaa	atattagaca	tttcaccttg	ctcttttggg	gggtgtaagt	3780
taattacacc	tggaaacaaat	gcttcatctg	aagttgtctg	tctatatcaa	gatgttaact	3840
gcactgatgc	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caatgtattc	cagactcaag	caggctgtct	tataggagct	gagcatgtcg	3960
acacttctta	tgagtgcgac	attcctattg	gagctggcat	ttgtgctagt	taccatacag	4020
tttcttttatt	acgtagtact	agccaaaaat	ctattgtggc	ttatactatg	tcttttaggtg	4080
ctgatagtgc	aattgctttac	tctaataaca	ccattgtctat	acctactaac	ttttcaatta	4140
gcattactac	agaagttaag	cctgttttcta	tggctaaaaac	ctccgtagat	tgtaatatgt	4200
acatctgcgg	agatttctact	gaatgtgcta	atttgcttct	ccaatatggg	agcttttgca	4260
cacaactaaa	tcgtgcactc	tcagggtattg	ctgtgtaaca	ggatcgcaac	acacgtgaag	4320
tgttcgtctc	agtcaaacaa	atgtacaaaa	cccaactttt	gaaatatttt	gggtggttta	4380
attttttcaca	aatattacct	gaccctctaa	agccaactaa	gaggtctttt	attgaggact	4440
tgctcttttaa	taagggtgaca	ctcgtgatg	ctggcttcat	gaagcaatat	ggcgaatgcc	4500
taggtgatat	taatgctaga	gatctcattt	gtgcgcagaa	gttcaatgga	cttacagtgt	4560
tgccactgc	tgatgatgtg	gatatgatgt	tgctgctcta	tgctgctcta	gttagtggtg	4620
aaatggcata	tggatggaca	tttgggtgctg	gcgctgctct	tcaaataacct	tttgctatgc	4680
aacaatcgc	taggttcaat	ggcattggag	ttacccaaaa	tgttctctat	gagaaccaaa	4740
catcaactgc	caaccaattt	aacaaggcga	ttagtcaaat	tcaagaatca	cttacaacaa	4800
cacttggttaa	attgggcaag	ctgcaagacg	agtgtgttct	gaatgctcaa	gcattaaaca	4860
tttcgcgact	acaacttagc	tctaattttt	gtgcaatttc	aagtgtgcta	aatgatattc	4920
ttcaaagcct	tgataaaagtc	gagggcggagg	tacaaattga	cagggttaatt	acaggcagac	4980
ctgctaattc	tcaaaccctat	gtaacacaac	aactaatcag	ggctgctgaa	atcagggtt	5040
acttttgtgg	aaaatgtctg	aaaatgtctg	tggaacaatca	aaaagagtgt	catgggtgtg	5100
tcttcctaca	aaagggctac	caccttatgt	agcagccccg	agcagccccg	catgggtgtg	5160
tttgtcatga	tgtcacgtat	gtgccatccc	aggagaggaa	cttcaccaca	gcgccagcaa	5220
cttggtttat	aggcaaagca	tacttccctc	gtgaagggtg	ttttgtgttt	aatggcactt	5280
ttgtctcagg	tacacagagg	aacttctttt	ctccacaaat	aattactaca	gacaatacat	5340
tgcaacctga	aaattgtgat	gtcgttattg	gcatcattaa	caacacagtt	tatgatcctc	5400
caccagatgt	gcttgactca	ttcaaagaag	agctggacaa	gtacttcaaa	aatcatacat	5460
aagaaattga	tgattttggc	gacatttcag	gcattaaacg	ttctgtcgtc	aacattcaaa	5520
aagaattggg	ccgcctcaat	gaggtcgcta	aaaattttaa	tgaatcactc	attgaccttc	5580
ttgctggact	aaaatatgag	caatatatta	aatggccttg	gtatgttttg	ctcggcttca	5640
gcagttgcct	aattgccatc	gtcatgggtta	caatcttgct	ttgttgcatg	actagttgtt	5700
ctgagccagt	caagggtgca	tgctctttgtg	gttctttgctg	caagtttgat	gaggatgact	5760
tcccgggtct	tctcaagggt	gtcaaattac	attacacata	agcggccgca	tcgatagatc	5820
ccctaacggt	agaggggagac	cacaacggtt	tccctctagc	gggtcaaat	ccgccccccc	5880
attttccacc	actggccgaa	gccgcttgga	ataaggccgg	tgtgcgtttg	tctatatggt	5940
cttgacgagc	atattgccgt	ctttttggcaa	tgtgagggcc	cggaaacctg	gccctgtctt	6000
tgctgtgaag	attcttaggg	gtctttcccc	tctcgcaaaa	ggaatgcaag	gtctgttgaa	6060
cctttgcagg	gaagcagttc	ctctggaagc	ttcttgaaga	caaacaacgt	ctgtagcgac	6120
	cagcggaaac	ccccacctgg	cgacaggtgc	ctctgcggcc	aaaagccacg	6180

SEQLIST-20480.TXT

tgtataagat	acacctgcaa	aggcggcaca	accccagtg	cacgttgga	gttgatag	6240
tgtggaaaga	gtcaaattgg	tctcctcaag	cgatttcaac	aaggggctga	aggatgccc	6300
gaaggtaccc	cattgtatgg	gatctgatct	ggggcctcgg	tgcacatgct	ttacatgtgt	6360
ttagtccagg	ttaaaaaacg	tctaggcccc	ccgaaccacg	gggacgtgg	tttcctttga	6420
aaaacacgat	aataccatgg	ttcgaccatt	gaactgcatc	gtcgccgtgt	cccaaaatat	6480
ggggattggc	aagaacggag	acctaccctg	gcctccgctc	aggaacgagt	tcaagtactt	6540
ccaaagaatg	accacaacct	cttcagtggg	aggtaaacag	aatctgggtg	ttatgggtag	6600
gaaaacctgg	ttctccattc	ctgagaagaa	tcgaccttta	aaggacagaa	ttaatatagt	6660
tctcagtaga	gaactcaaag	aaccaccacg	aggagctcat	tttcttgcca	aaagtttggg	6720
tgatgcctta	agacttattg	aacaaccgga	attggcaagt	aaagtagaca	tggtttggat	6780
agtcggaggc	agttctgttt	accagggaagc	catgaatcaa	ccaggccacc	tcagactctt	6840
tgtgacaagg	atcatgcagg	aatttgaag	tgacacgttt	ttccagaaa	ttgatttggg	6900
gaaatataaa	cttctcccag	aatacccagg	cgctctctct	gaggtccagg	aggaaaaagg	6960
catcaagtat	aagtttgaag	tctacgagaa	gaaagacgga	ggaggatcca	tgattgaaca	7020
agatggattg	cacgcagggt	ctccggccgc	ttgggtggag	aggctattcg	gctatgactg	7080
ggcacaacag	acaactgggt	gctctgatgc	cgccgtgttc	cggtgtcag	cgcaggggag	7140
cccgtttctt	tttgtcaaga	ccgacctgtc	cggtgccttg	aatgaactgc	aggacgaggc	7200
agcgcggcta	tcgtggctgg	ccacgacggg	cgctccttgc	gcagctgtgc	tcgacgttgt	7260
caactgaagc	ggaagggaat	ggctgctatt	gggcgaagtg	ccggggcagg	atctcctgtc	7320
atctcacctt	gctcctgccc	agaaagtatc	catcatggct	gatgcaatgc	ggcggctgca	7380
tacgtttgat	ccggctacct	gcccattcga	ccaccagcgc	aaacatcgca	tcgagcgagc	7440
acgtactcgg	atggaagccg	gtcttgcga	tcaggatgat	ctggacgaag	agcatcaggg	7500
gctcgcgcca	gccgaactgt	tcgccaggct	caaggcgcgc	atgcccgcag	gcgaggatct	7560
cgctcgtgac	catggcgatg	cctgcttgcc	gaatatcatg	gtggaaaatg	gccgcttttc	7620
tggattcatc	gactgtggcc	ggctgggtgt	ggcggaccgc	tatcaggaca	tagcgttggc	7680
taccctgtat	attgctgaag	agcttggcgg	cgaatgggct	gaccgcttcc	tcgtgcttta	7740
cggtatcgcc	gctcccgaat	cgagcgcgat	cgcttcttat	cgcttctttg	acgagttctt	7800
ctgaggatcc	actacgcgtt	agagctcgct	gatcagcctc	gactgtgcct	tctagtggcc	7860
agccatttgt	tggttgcctc	tccccgtgc	cttccctgac	cctggaagg	gccactccca	7920
ctgtcctttc	ctaataaaat	gaggaaattg	catcgcattg	tctgagtagg	tgctattcta	7980
ttctgggggg	tgggggtggg	caggacagca	agggggagga	ttgggaagac	aatagcaggc	8040
atgctgggga	gctcttccgc	ttcctcgctc	actgactcgc	tgcgctcgg	cgttcggctg	8100
cggcgagcgg	tcgtgtagat	ctcaaaggcg	gtaactcgg	tatccacaga	atcaggggag	8160
aacgcaggaa	agaacatgtg	agcaaaaggc	cagcaaaagg	ccaggaaccg	taaaaaggcc	8220
gcgttgctgg	cgtttttcca	taggctccgc	ccccctgacg	agcatcacaa	aaatcgacgc	8280
tcaagtcaga	ggtggcgaaa	cccagacagga	ctataaagat	accaggcggt	tccccctgga	8340
agctccctcg	tgcttctccc	tgcttccgac	ctgcctgcta	ccggataacct	gtccgccttt	8400
ctcccttcgg	gaagcgtggc	gctttctcaa	tgctcacgct	gtaggtatct	cagttcgggtg	8460
taggtcgttc	gctccaagct	gggctgtgtg	cacgaacccc	ccgttcagcc	cgaccgctgc	8520
gccttatccc	gtaactatcg	tcttgagtcc	aaccgggtaa	gacacgactt	atcgccactg	8580
gactccccg	ctggtagaga	gattagcaga	gcgaggtatg	taggcgggtg	tacagagttc	8640
ttgaagtgg	ggcctaacta	cggctacact	agaaggacag	tatttgggtat	ctgcgctctg	8700
ctgaagccag	ttaccttcgg	aaaaagagtt	ggtagctctt	gatccggcaa	acaaaccacc	8760
gctggtagcg	gtggtttttt	tgtttgcaag	cagcagatta	cgcgagaaa	aaaaggatct	8820
caagaagatc	ctttgatctt	ttctacgggg	cttgacgctc	agtggaaacga	aaactcacgt	8880
taagggattt	tggtcatgag	attatcaaaa	aggatcttca	cctagatcct	tttaaattaa	8940
aaatgaagtt	ttaaatcaat	ctaaagtata	tatgagtaaa	cttgggtctga	cagttacca	9000
tgcttaatca	gtgaggcacc	tatctcagcg	atctgtctat	ttcgttcac	catagttgct	9060
tgactccccg	tcgtgtagat	aactacgata	cgggagggct	taccatctgg	ccccagtgct	9120
gcaatgatac	cgcgagaccc	acgctcaccg	gctccagatt	tatcagcaat	aaaccagcca	9180
gccggaagg	ccgagcgag	aagtggctct	gcaactttat	ccgcctccat	ccagtctatt	9240
aattgttgcc	gggaagctag	agtaagtagt	tcgccagtta	atagtttgcg	caacgttggt	9300
gccattgcta	caggcatcgt	ggtgtcacgc	ctgtcgtttg	gtatggcttc	attcagctcc	9360
ggttcccaac	gatcaaggcg	agttacatga	tccccatgt	tgtgcaaaaa	agcggtagc	9420
tccttcgggt	ctccgatcgt	tgctcagaagt	aagttggccg	cagtgttatc	actcatgggt	9480
atggcagcac	tgcaataatc	tcttactgtc	atgccatccg	taagatgctt	ttctgtgact	9540
ggtgagtact	caaccaagtc	attctgagaa	tagtgtatgc	ggcgaccgag	ttgctcttgc	9600
ccggcgctcaa	tacgggataa	taccgcgcca	catagcagaa	ctttaaaagt	gctcatcatt	9660
ggaaaacggt	cttcggggcg	aaaactctca	aggatcttac	cgctgttgag	atccagttcg	9720
atgtaaccca	ctcgtgcacc	caactgatct	tcagcatctt	ttactttcac	cagcgtttct	9780
gggtgagcaa	aaacaggaag	gcaaaaaggc	gaataaaggg	gcatttatca	gacacggaaa	9840
tggtgaatac	tcatactctt	cctttttcaa	tattattgaa	gcatttatca	gggttattgt	9900
ctcatgagcg	gatacatatt	tgaatgtatt	tagaaaaata	aacaaatagg	ggttccgcgc	9960

			SEQLIST-20480.TXT		
acattttcccc	gaaaagtgcc	acctgacgtc	taagaaacca	ttattatcat	gacattaacc
tataaaaata	ggcgtatcac	gaggcccttt	cgtc		

10020
10054

<210> 6580
<211> 9892
<212> DNA
<213> Expression plasmid

<400>	6580					
tgcgcgcttt	cggatgatgac	ggtgaaaacc	tctgacacat	gcagctcccg	gagacgggtca	60
cagcttgtct	gtaagcggat	gccgggagca	gacaagcccc	tcagggcgcg	tcagcgggtg	120
ttggcgggtg	tcggggctgg	cttaactatg	cggcatacaga	gcagattgta	ctgagagtg	180
accatatgaa	gcctttttgca	aaagcctagg	ccctcaaaaa	agcctcctca	ctacttctgg	240
aatagctcag	aggccgaggg	ggcctcgccc	tctgcataaa	taaaaaaaat	tagtcagcca	300
tggggcgagg	aatgggcgga	actgggcggg	gagggaaatta	ttggctattg	gccattgcat	360
acgttgtatc	tatatcataa	tatgtacatt	tatatgggct	catgtccaat	atgaccgcca	420
tgttgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacggggtc	attagttcat	480
agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccggc	tggctgaccg	540
cccaacgacc	cccggccatt	gacgtcaata	atgacgtatg	ttcccatagt	aacgccaata	600
gggactttcc	attgacgtca	atgggtggag	tatttacggt	aaactgccc	cttggcagta	660
catcaagtgt	atcatatgca	aagtcggccc	cctattgacg	tcaatgacgg	taaatggccc	720
gcctggcatt	atgccagata	catgacctta	cgggactttc	ctacttggca	gtacatctac	780
gtattagtca	tcgctattac	catggtgatg	cggttttggc	agtacaccaa	tgggcgtgga	840
tagcggtttg	actcacgggg	atttccaagt	ctccacccca	ttgacgtcaa	tgggagtttg	900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgta	ataaccccgc	cccgttgacg	960
caaatgggcg	gtaggcgtgt	acgggtggag	gtctatataa	gcagagctcg	tttagtgaac	1020
cgtcagatcg	cctggagacg	ccatccacgc	tgttttgacc	tccatagaag	acaccgggac	1080
cgatccagcc	tccgcggccg	ggaacgggtg	attggaacgc	ggattccccg	tgccaagagt	1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggctcttat	gcatgctata	1200
ctgttttttg	cttggggcct	atacaccccc	gtccttatg	ctataggtga	tggtagact	1260
tagcctatag	gtgtgggtta	ttgaccatta	ttgaccactc	ccctattggg	gacgatactt	1320
tccattacta	atccataaca	tggctctttg	ccacaactat	ctctattggc	tatatgcca	1380
tacttgcacc	gacacggagc	tgatattttt	atacttcatc	acaggatggg	gtccatttat	1440
tatttcaaaa	ttcacatata	caacaacgcc	gtcccccg	cccgcagttt	ttattaaaca	1500
tagcgtggga	tctccgacat	ctcgggtacg	tgttccggac	atgggctctt	ctccggtagc	1560
ggcggagctt	ccacatccga	gcccgtgtcc	catccgtcca	gcggctcatg	gtcgtctggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtgtgccc	acaaggccgt	ggcggtaggg	tatgtgtctg	aaaatgagct	cggagatttg	1740
gctcgcacct	ggacgcagat	ggaagactta	aggcagcggc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccgt	tgccggtgctg	ttaacgggtg	1860
agggcagtg	agtcgtagca	gtactcgttg	ctgcgcgcgc	gcgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgctcgaccg	1980
tcgcgaattc	gtacgatatc	ggcgcgcctc	gaggtcgaag	gcgcgcgcgc	accatgttca	2040
tcttcctgct	gttcctgact	ctcactagt	gtagtgaact	tgaccgggtg	accacttttg	2100
atgatgttca	agctccta	tacactcaac	atacttcatc	tatgaggggg	gtttactatc	2160
ctgatgaaat	tttttagatca	gacactcttt	atttaactca	ggattttatt	cttccatttt	2220
attctaattg	tacagggttt	catactatta	atcatacgtt	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tatttatatt	gctgccacag	agaaatcaaa	tgttgtccgt	ggttgggttt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaacaat	tctactaatg	2400
ttgttatacg	agcatgtaac	tttgaattgt	gtgacaaccc	tttctttgct	gtttctaaac	2460
ccatgggtac	acagacacat	actatgat	tcgataatgc	atttaattgc	actttcgagt	2520
acatatctga	tgccttttctg	cttgatgttt	cagaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaacct	2640
tagatgtagt	tcgtgatcta	ccttctgggt	ttaacacttt	gaaacctatt	tttaagttgc	2700
ctcttggtat	taacattaca	aatttttagag	ccattcttac	agccttttca	cctgctcaag	2760
acatttgggg	cacgtcagct	gcagccattt	ttgttggtta	tttaaagcca	actacattta	2820
tgctcaagta	tgatgaaaat	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgctgaact	caaatgctct	gttaagagct	ttgagattga	caaaggaatt	taccagacct	2940
ctaatttcag	ggttggtccc	tcaggagatg	ttgtgagatt	ccctaataat	acaaacttgt	3000
gtccttttgg	agagggtttt	aatgctacta	aattcccttc	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtgtt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
cctttaagt	ctatggcggt	tctgccacta	agtgtgaatga	tctttgcttc	tccaatgtct	3180
atgcagattc	ttttgtagtc	aagggagatg	atgtaagaca	aatagcggca	ggacaaactg	3240

SEQLIST-20480.TXT

gtgttattgc	tgattataat	tataaattgc	cagatgattt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tataggtatc	3360
ttagacatgg	caagcttagg	ccctttgaga	gagacatatc	taatgtgcct	ttctcccctg	3420
attggcaaac	ttgcacccca	cctgctctta	attgttattg	gccattaaat	gattatgggt	3480
tttacaccac	tattggcatt	ggctaccaac	cttgacagat	tgtagtactt	tcttttgaa	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	caactgacct	attaagaacc	3600
agtgtgtcaa	ttttaatttt	aatggactca	ctgggtactgg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttcaa	caatttggcc	gtgatgtttc	tgatttcact	gattccgctt	3720
gagatcctaa	aacatctgaa	atatttagaca	tttcaccttg	ctcttttggg	ggtgtaagt	3780
taattacacc	tggaacaaat	gcttcatctg	aagtgtctgt	tctatatcaa	gatgttaact	3840
gcactgatgt	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caatgtattc	cagactcaag	caggctgtct	tataggagct	gagcatgtcg	3960
acacttctta	tgagtgcgac	attccttattg	gagctgtcat	ttgtgctagt	taccatacag	4020
tttctttatt	acgtagtact	agccaaaaat	ctattgtggc	ttatactatg	tcttttaggtg	4080
ctgatagtgc	aattgcttac	tctaataaca	ccattgctat	acctactaac	ttttcaatta	4140
gcattactac	agaagtaatg	cctgtttcta	tggtctaaac	ctccgtagat	tgtaatatgt	4200
tgatcctcga	tgattgtgct	gaatgtgcta	attgtcttct	ccaatatggt	agcttttgca	4260
cacaactaaa	tcgtgcactc	tcagggtattg	ctgctgaaca	ggatcgcaac	acacgtgaag	4320
tgttcgcctca	agtcaaacaa	atgtacaaaa	ccccactttt	gaaatatatt	ggtgggtttta	4380
atttttcaca	aatattacct	gaccctctaa	agccaactaa	gaggtctttt	attgaggact	4440
tgctctttta	taagttgcaca	ctcgtgatgt	ttaccctcat	gaagcaatat	ggcgaatgcc	4500
taggtgatata	taatgctaga	gatctcattt	gtgcgcagaa	gttcaatgga	cttacagtgt	4560
tgccacctct	gctcactgat	gatatgattg	ctgcctacac	tgctgctcta	gttagtggtta	4620
ctgccactgc	tggtatggaca	tttgggtgctg	gcgctgtctt	tcaaataacct	tttgctatgc	4680
aaatggcata	tgataaagtc	ggcattggag	ttacccaaaa	tgttctctat	gagaaccaaa	4740
aacaaatcgc	caaccaattt	aacaaggcga	ttagtcaaat	tcaagaatca	cttacaacaa	4800
catcaactgc	attgggcaag	ctgcaagacg	ttgttaacca	gaatgtctaa	gcattaaaca	4860
cacttggttaa	acaacttagc	tctaattttg	gtgcaatttc	aagtgtgcta	aatgatattc	4920
tttcgcgact	tgataaagtc	gagggcgagg	tacaaattga	cagggttaatt	acaggcagac	4980
ttcaaagcct	tcaaacctat	gtaacacaac	aactaatcag	ggctgctgaa	atcagggctt	5040
ctgctaattc	tgctgctact	aaaatgtctg	agtgtgttct	tggacaatca	aaaagagttg	5100
acttttgtgg	aaagggtctac	caccttatgt	ccttcccaca	agcagccccg	catgggtgtg	5160
tcttctctaca	gtgccatccc	gtgccatccc	aggagaggaa	cttcaccaca	gcgccagcaa	5220
tttgtcatga	aggcaaagca	tacttccctc	gtgaagggtg	ttttgtgttt	aatggcactt	5280
cttgggtttat	tacacagagg	aacttctttt	ctccacaaat	aattactaca	gacaatacat	5340
ttgtctcagg	aaattgtgat	gtcgttattg	gcattcattaa	caacacagtt	tatgatcctc	5400
tgcaacctga	cttgacttca	ttcaaagaag	agctgtgacaa	gtacttcaaa	atcatacat	5460
caccagatgt	tgattttggc	gacatttcag	gcattaacgc	ttctgtcgtc	aacattcaaa	5520
aagaaattga	ccgcctcaat	gaggtcgcta	aaaatttaaa	tgaatcactc	attgaccttc	5580
aagaattggg	aaaatatgag	caatatatta	aatggcctca	ccaccaccac	caccactaag	5640
cgccgcgact	gatagatctc	ccgggtctag	agggagacca	caacgggttc	cctctagcgg	5700
gatcaattcc	gccccccccc	ctaactgtac	tgcccggaag	cgcttggaat	aaggccgggtg	5760
tgcggtttgtc	tatatgttat	tttccaccat	attgccgtct	tttggaatg	tgaggggccc	5820
gaaacctggc	cctgtcttct	tgacgagcat	tcctaggggg	ctttcccttc	tcgccaaaag	5880
aatgcaagg	ctgttgaatg	tcgtgaagg	agcagttcct	ctggaagctt	cttgaagaca	5940
aacaacgtct	gtagcgaccc	tttgcaggca	gcggaacccc	ccacctggcg	acagggtgcct	6000
ctgcggccaa	aagccacgtg	tataagatac	acctgcaaa	gcggcacaa	cccagtgcca	6060
cgttgtgagt	tggtatgttg	tggaagagat	caaatggctc	tcctcaagcg	tattcaacaa	6120
ggggctgaag	gatgcccgag	aggtacccca	ttgtatggga	tctgatctgg	ggcctcggtg	6180
cacatgcttt	acatgtgttt	agtcgaggtt	aaaaaacgtc	taggcccccc	gaaccacggg	6240
gacgtggttt	tcctttgaaa	aacacgataa	taccatgggt	cgaccattga	actgcatcgt	6300
cgccgtgtcc	caaaaatagg	ggattggcaa	gaacggagac	ctaccctggc	ctccgctcag	6360
gaacgagttc	aagtacttcc	aaagaatgac	cacaacctct	tcagtggga	gtaaacagaa	6420
tctggtgatt	atgggttaga	aaacctggtt	ctccattcct	gagaagaatc	gaccttttaa	6480
ggacagaatt	aatatagttc	tcagttagaga	actcaaaaga	ccaccacgag	gagctcattt	6540
tcttgccaaa	agtttgatg	atgccttaag	acttattgaa	caaccggaat	tggaagtaa	6600
agtagacatg	gtttggatag	tcggaggcag	ttctgtttac	caggaagcca	tgaatcaacc	6660
aggccacctc	agactctttg	tgacaaggat	catgcaggaa	tttgaaagt	acacgttttt	6720
cccagaaatt	gatttgggga	aatataaact	tctcccagaa	taccagggcg	tcctctctga	6780
ggtccaggag	gaaaaaggca	tcaagtataa	gtttgaagtc	tacgagaaga	aagacggagg	6840
aggatccatg	attgaacaag	atggattgca	cggagggtct	ccggccgctt	gggtggagag	6900
gctattcggc	tatgactggg	cacaacagac	aatcggtctg	tctgatgccg	ccgtgttccg	6960
gctgtcagcg	caggggcg	cggttctttt	tgtcaagacc	gacctgtccg	gtgccctgaa	7020

SEQLIST-20480.TXT

tgaactgcag	gacgaggcag	cgcggtatc	gtggctggcc	acgacgggcg	ttccttgccg	7080
agctgtgctc	gacgttgtca	ctgaagcggg	aagggactgg	ctgctattgg	gcgaagtgcc	7140
ggggcaggat	ctcctgtcat	ctcaccttgc	tcctgccgag	aaagtatcca	tcatggctga	7200
tgcaatgcgg	cggctgcata	cgcttgatcc	ggctacctgc	ccattcgacc	accaagcgaa	7260
acatcgcatc	gagcgagcac	gtactcggat	ggaagccggg	cttgctcgatc	aggatgatct	7320
ggacgaagag	catcaggggc	tcgcgccagc	cgaactgttc	gccaggctca	aggcgcgcat	7380
gcccgcggc	gaggatctcg	tcgtgaccca	tggcgatgcc	tgcttgccga	atatcatggt	7440
ggaaaatggc	cgcttttctg	gattcatcga	ctgtggccgg	ctgggtgtgg	cggaccgcta	7500
tcaggacata	gcgttggcta	cccgtgatat	tgctgaagag	cttggcggcg	aatgggctga	7560
ccgcttcctc	gtgctttacg	gtatcgccgc	tcccgatctg	cagcgcatcg	ccttctatcg	7620
ccttcttgac	gagttcttct	gaggatccac	tacgcgttag	agctcgctga	tcagcctcga	7680
ctgtgccttc	tagttgccag	ccatctgttg	tttgcccctc	ccccgtgcct	tccttgacct	7740
tggaagggtg	actccccact	gtcctttcct	aataaaatga	ggaaattgca	tcgcattgtc	7800
tgagtagggtg	tcattctatt	ctgggggggtg	gggtggggca	ggacagcaag	ggggaggatt	7860
gggaagacaa	tagcaggcat	gctggggagc	tcttccgctt	cctcgctcac	tgactcgctg	7920
cgctcggctg	ttcggctgcg	gcgagcggta	tcagctcact	caaaggcggg	aatacggtta	7980
tccacggata	caggggata	cgcaggaag	gttgctggcg	caaaaaggcca	gcaaaaaggcc	8040
aggaaccgta	aaaaggccgc	gttgctggcg	tttttccata	ggctccgccc	ccctgacgag	8100
catcacaaaa	atcgacgctc	aagtcagagg	tggcgaaacc	cgacaggact	ataaagatac	8160
caggcgcttc	cccctggaag	ctccctcgty	cgctctcctg	ttccgaccct	gccgcttacc	8220
ggatacctgt	ccgcctttct	cccttcggga	agcgtggcgc	tttctcaatg	ctcacgctgt	8280
aggtatctca	gttcgggtgta	ggctcgttcg	tccaagctgg	gctgtgtgca	cgaaccccc	8340
gttcagcccc	accgctgcgc	cttatccggt	aactatcgct	ttgagtccaa	cccggtaaga	8400
cacgacttat	cgccactggc	agcagccact	ggtaacagga	ttagcagagc	gaggtatgta	8460
ggcggtgcta	cagatgttct	gaagtgggtg	cctaactacg	gctacactag	aaggacagta	8520
tttggtatct	gcgctctgct	gaagccagtt	accttcggaa	aaagagttgg	tagctcttga	8580
tccggcaaac	aaaccaccgc	tggtagcggg	ggtttttttg	tttgcaagca	gcagattacg	8640
cgcagaaaaa	aaggatctca	agaagatcct	ttgatctttt	ctacgggggc	tgacgctcag	8700
tggaacgaaa	actcacgta	agggattttg	gtcatgagat	tatcaaaaag	gatcttcacc	8760
tagatccttt	taaattaaaa	atgaagtttt	aaatcaatct	aaagtatata	tgagtaaact	8820
tggtctgaca	gttaccatg	cttaatcagt	gaggcaccta	tctcagcgat	ctgtctattt	8880
cgttcatcca	tagttgcctg	actccccgtc	gtgtagataa	ctacgatacg	ggagggctta	8940
ccatctggcc	ccagtggcc	aatgataccg	cgagaccac	gctcaccggc	tccagattta	9000
tcagcaataa	accagccagc	cggaaaggcc	gagcgagaa	gtggctcctg	aactttatcc	9060
gcctccatcc	agtctattaa	ttgttgccgg	gaagctagag	taagtagttc	gccagttaat	9120
agtttgcgca	acgttgctgc	cattgtctac	ggcatcgtyg	tgacacgctc	gtcgtttggt	9180
atggcctcat	tcagctccgg	ttcccaacga	tcaaggcgag	ttacatgata	ccccatgtyg	9240
tgcaaaaaag	cggttagctc	cttcggtcct	ccgatcgtyg	tcagaagtaa	gttggccgca	9300
gtgttatcac	tcatggttat	ggcagcactg	cataattctc	ttactgtcat	gccatccgta	9360
agatgctttt	ctgtgactgg	tgagtactca	accaagtcac	tctgagaata	gtgtatgcgg	9420
cgaccgagtt	gctcttgccc	ggcgtaata	cgggataata	ccgcgccaca	tagcagaact	9480
ttaaaagtgc	tcatacttgg	aaaacgttct	tcggggcgaa	aactctcaag	gatcttaccg	9540
ctgttgagat	ccagttcgat	gtaaccact	cgtgcaccca	actgatcttc	agcatctttt	9600
actttcacca	gcgtttctgg	gtgagcaaaa	acaggaaggc	aaaatgccgc	aaaaaaggga	9660
ataaggcgca	cacggaaatg	ttgaatactc	atactcttcc	tttttcaata	ttattgaagc	9720
atttatcagg	gttatgtct	catgagcgga	tacatatgtg	aatgtattta	gaaaaataaa	9780
caaatagggg	ttccgcgcac	atttcccga	aaagtgccac	ctgacgtcta	agaaaccatt	9840
attatcatga	cattaacct	taaaaaatag	cgtatcacga	ggccctttcg	tc	9892

<210> 6581
 <211> 9874
 <212> DNA
 <213> Expression plasmid

<400> 6581						
tcgcgcgttt	cggatgatgac	ggtgaaaacc	tctgacacat	gcagctcccc	gagacgggtca	60
cagcttgtct	gtaagcggat	gccgggagca	gacaagcccc	tcagggcgcg	tcagcgggtg	120
ttggcgggtg	tcggggctgg	cttaactatg	cggcatacaga	gcagattgta	ctgagagtgc	180
accatatgaa	gctttttgca	aaagcctagg	cctccaaaaa	agcctcctca	ctacttcttg	240
aatagctcag	aggccgaggc	ggcctcggcc	tctgcataaa	taaaaaaaat	tagtcagcca	300
tggggcggag	aatgggcgga	actgggcggg	gaggggaatta	ttggctattg	gccattgcat	360
acgttgtatc	tatatcataa	tatgtacatt	tatatgtggc	catgtccaat	atgaccgcca	420
tgttgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacgggggc	attagttcat	480

SEQLIST-20480.TXT

agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccgcc	tggctgaccg	540
cccaacgacc	cccgccatt	gacgtcaata	atgacgtatg	ttcccatagt	aacgccaata	600
gggactttcc	attgacgtca	atgggtggag	tattttacggt	aaactgcccc	cttggcagta	660
catcaagtgt	atcatatgcc	aagtcgcccc	cctattgacg	tcaatgacgg	taaattggccc	720
gcctggcatt	atgcccagta	catgacctta	cgggaccttc	ctacttggca	gtacatctac	780
gtattagtca	tcgctattac	catggtgatg	cggttttggc	agtacacca	tgggcgtgga	840
tagcggtttg	actcacgggg	atttccaagt	ctccacccca	ttgacgtcaa	tgggagtttg	900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgt	ataacccccg	cccgttgacg	960
caaatgggcg	gtaggcgtgt	acgggtggag	gtctatataa	gcagagctcg	tttagtgaac	1020
cgtcagatcg	cctgggagacg	ccatccacgc	tgttttgacc	tccatagaag	acaccgggac	1080
cgatccagcc	tccgcggccg	ggaacgggtc	attggaacgc	ggattccccg	tgccaagagt	1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggctcttat	gcatgctata	1200
ctgttttttg	ttttagggctt	atacaccccc	gtctcttatg	ctatagggtga	tggatagct	1260
tagcctatag	gtgtgggtta	ttgaccatta	ttgaccactc	ccctatttgg	gacgatactt	1320
tccattacta	atccataaca	tggctctttg	ccacaactat	ctctattggc	tatatgccaa	1380
tactctgtcc	ttcagagact	gacacggact	ctgtattttt	acaggatggg	gtccattttat	1440
tatttaca	gtacagctta	caacaacgcc	gtcccctgtg	cccgcagttt	ttattaaaca	1500
tagcgtggga	tctccgacat	ctcgggtacg	tgttccggac	atgggctctt	ctccggtagc	1560
ggcggagctt	ccacatccga	gccctgggtc	catccgtcca	gcggtctcatg	gtcgtctcggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtgtgcccg	acaagctggt	ggcgttaggg	tggtcttctg	aaaatgagct	cggagattgg	1740
gctcgcacct	ggacgcagat	ggaagactta	aggcagcggc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccgt	tgcggtgctg	ttaacgggtg	1860
agggcagtg	agtctgagca	gtactcgttg	ctgccgcgcg	cgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgctcgaccgg	1980
tcgcgaattc	gtacgatatc	ggcgcgcctc	gaggtcgaag	gcgcgcgccg	accatgttca	2040
tcttcctgct	gttcctgact	ctcactagt	gtagtgcact	tgaccgggtg	accacttttg	2100
atgatgttca	agctccta	tacactcaac	atacttcac	tatgaggggg	gtttactatc	2160
ctgatgaaat	ttttagatca	gacactcttt	atttaactca	ggattttatt	cttccatttt	2220
attcta	tacagggttt	catactatta	atcatacg	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tattttattt	gctgccacag	agaaatcaaa	tgttgtccgt	ggttgggttt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaaca	tctactaatg	2400
ttgttatacg	agcagttaac	ttgaattgtg	gtgacaacc	tttctttgct	gtttctaaac	2460
ccatgggtac	acagacacat	actatgat	tcgataatgc	atttaattgc	actttcgagt	2520
acatatctga	tgccttttcg	cttgatgttt	cagaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaacct	2640
tagatgaaat	tcgtgatcta	cccttctggt	ttaaactttt	gaaacctatt	tttaagttgc	2700
ctcttggtat	taacattaca	aatttttagag	ccattcttac	agccttttca	cctgctcaag	2760
acatttgggg	cacgtcagct	gcagcctatt	ttgttggcta	tttaaaggcca	actacattta	2820
tgctcaagta	tgatgaaaa	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgttgaaact	caaatgctct	gttaagagct	ttgagatga	caaagggaatt	taccagacct	2940
ctaatttcag	ggttgttccc	tcaggagatg	ttgtgagatt	ccctaata	acaaacttgt	3000
gtcctttttg	agaggttttt	aatgctacta	aattcccctc	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtgtt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
ccttttaagt	ctatggcggt	tctgccacta	agttgaatga	tctttgcttc	tccaatgtct	3180
atgcagattc	ttttgtagtc	aaggagatg	atgtaagaca	aatagcgcca	ggacaaactg	3240
gtgttattgc	tgattataat	tataaattgc	cagatgattt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tataggatc	3360
ttagacatgg	caagcttagg	ccctttgaga	gagacatatc	taatgtgcct	ttctcccctg	3420
atggcaaacc	ttgcacccca	cctgctctta	attgttattg	gccattaaat	gattatgggt	3480
tttacaccac	cactggcatt	ggctaccaac	cttacagagt	tgtagtactt	tcttttgaac	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	cactgacctt	attaagaacc	3600
agtgtgtcaa	ttttaatttt	aatggactca	ctggtagctg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttcaa	caatttggcc	gtgatgtttc	tgatttcact	gattccgttc	3720
gagatcctaa	aacatctgaa	atattagaca	tttcaccttg	ctcttttggg	ggtgtaagt	3780
taattacacc	tggaaacaa	gcttcatctg	aagttgctgt	tctatatcaa	gatgttaact	3840
gcactgatgt	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caatgtattc	cagactcaag	caggctgtct	tataggagct	gagcatgtcg	3960
acacttctta	tgagtgcgac	attcctattg	gagctggcat	ttgtgctagt	taccatacag	4020
tttcttttatt	acgtagtact	agccaaaaat	ctattgtggc	ttatactatg	tcttttaggtg	4080
ctgtatgttc	aattgcttac	tctaataaca	ccattgctat	acctactaac	ttttcaatta	4140
gcattactac	agaagtaatg	cctgtttcta	tggctaaaac	ctccgtagat	tgtaatatgt	4200
acatctgcgg	agattctact	gaatgtgcta	atttgcctct	ccaatatggt	agcttttgca	4260

SEQLIST-20480.TXT

cacaactaaa	tcgtgcactc	tcaggtattg	ctgctgaaca	ggatcgcaac	acacgtgaag	4320
tgttcgcctca	agtcaaacaa	atgtacaaaa	ccccacttt	gaaatatttt	ggtggtttta	4380
atttttcaca	aatattacct	gaccctctaa	agccaaactaa	gaggtctttt	attgaggact	4440
tgctctttta	taaggtgaca	ctcgtgatg	ctggcttcac	gaagcaatat	ggcgaatgcc	4500
taggtgatata	taattgctaga	gatctcattt	gtcgcagaaa	gttcaatgga	cttacagtgt	4560
tgccacctct	gctcactgat	gatattgattg	ctgcctacac	tgctgctcta	gttagtggtta	4620
ctgccactgc	tggatggaca	tttgggtgctg	gcgctgctct	tcaaataacct	tttgctatgc	4680
aaatggcata	taggttcaat	ggcattggag	ttacccaaaa	tgttctctat	gagaacccaaa	4740
aacaaatcgc	caaccaattt	aacaaggcga	ttagtcaaatt	tcaagaatca	cttacaacaa	4800
catcaactgc	attgggcaag	ctgcaagacg	ttgttaacca	gaatgctcaa	gcattaaaca	4860
cacttggttaa	acaacttagc	tctaattttg	gtgcaatttc	aagtgtgcta	aatgatatcc	4920
tttcgcgact	tgataaagtc	gaggcggagg	tacaaattga	cagggttaatt	acaggcgagac	4980
ttcaaacctt	tcaaacacaa	gtaaacacag	aactaatcag	ggctgctgaa	atcagggtctt	5040
ctgctaattct	tgctgctact	aaaatgtctg	agtgtgttct	tggaacaatca	aaaagagttg	5100
acttttgtgg	aaagggctac	caccttatgt	ccttcccaca	agcagccccg	catggtgttg	5160
tcttctctaca	tgctacgtat	gtgccatccc	aggagaggaa	cttcaccaca	gcgccagcaa	5220
tttgacaggt	agggaacgca	tacttccctc	gtgaagggtgt	ttttgtgttt	aatggcactt	5280
cttgggtttat	tacacagagg	aacttctttt	ctccacaaat	aattactaca	gacaatacat	5340
ttgtctcagg	aaatttgtgat	gtcgttattg	gcatacattaa	caacacagtt	tatgatcctc	5400
tgcgaacctga	gcttgactca	ttcaaagaag	agctggacaa	gtacttcaaaa	aatcatacat	5460
caccagatgt	tgatttttgc	gacatttcag	gcataaactgc	ttctgtcgtc	aacattcaaaa	5520
aagaaattga	ccgcctcaat	gaggtcgcta	aaaattttaa	tgaatcactc	attgaccttc	5580
aagaattggg	aaaatatgag	caatatatta	aatggcctta	agcggccgca	tcgatagatc	5640
tcccgggtct	agagggagac	cacaacggtt	tccctctagc	gggatcaatt	ccgccccccc	5700
cccttaacgtt	cagcggaaac	gccgcttgga	ataaggccgg	tgtgctgttg	tctatatgtt	5760
attttccacc	atattgccgt	cttttggcaa	tgtgagggcc	cggaaacctg	gccctgtctt	5820
cttgacgagc	attcctaggg	gtctttcccc	tctcgccaaa	ggaatgcaag	gtctgttgaa	5880
tgctcgtgaag	gaagcagttc	ctctggaagc	ttcttgaaga	caaacaacgt	ctgtagcgac	5940
cccttaacgtt	cacacacttg	ccccacttgg	cgacaggtgc	ctctgctggc	aaaagccacg	6000
tgtataagat	acacctgcaa	aggcggcaca	accccgatgc	cacgttgtga	gttggtatgt	6060
tgtggaaaga	gtcaaattggc	tctcctcaag	cgtattcaac	aaggggctga	aggatgcccc	6120
gaaggtaccc	cattgtatgg	gatctgatct	ggggcctcgg	tgacatgct	ttacatgtgt	6180
ttagtgcagg	ttaaaaaacg	ttagggccc	cgaaaccacg	gggacgtggt	tttcttttga	6240
aaaacacgat	aataccatgg	ttcgaccatt	gaactgcac	gtcgccgtgt	cccaaaatat	6300
ggggattggc	aagaacggag	acctaccctg	gcctccgctc	aggaacgagt	tcaagtaact	6360
ccaaagaatg	accacaacct	cttcagtgga	aggtaaacag	aatctgggtga	ttatgggtag	6420
cctttgcagg	gtcgcgaacc	tcgagacttt	tcgacacttt	aaggacagaa	ttaatatagt	6480
tctcagtaga	gaactcaaag	aaccaccacg	aggagctcat	tttcttgcca	aaagtttgga	6540
tgatgcctta	agacttattg	aacaaccgga	attggcaagt	aaagtagaca	tggtttggat	6600
agtcggaggc	agttctgttt	accaggaagc	catgaatcaa	ccaggccacc	tcagactctt	6660
tgtagtcagg	atcattgcagg	aatttgaaaag	tgacactttt	ttcccagaaa	ttgatttggg	6720
gaaatataaa	cttctcccag	aatacccagg	cgctctctct	gaggtccagg	aggaaaaagg	6780
catcaagtat	aagtttgaag	tctacgagaa	gaaagacgga	ggaggatcca	tgattgaaca	6840
agatggattg	cacgcaggtt	ctccggccgc	ttgggtggag	aggctattcg	gctatgactg	6900
ggcacacaag	acaatcggtc	gctctgatgc	cgccgtgttc	cggctgtcag	cgcaggggcg	6960
cccggttctt	tttgtcaaga	ccgacctgtc	cggtgccctg	aatgaactgc	aggacgaggc	7020
agcgcggcta	tcgtggctgg	ccacgacggg	cgttccttgc	gcagctgtgc	tcgacgttgt	7080
cactgaagcg	ggaagggact	ggctgtattt	gggcgaagtg	ccggggcagg	atctcctgtc	7140
atctcacctt	gttcttgcgg	agaaaagtac	catcatggct	gatgcaatgc	ggcggctgca	7200
tacgcttgat	ccggctacct	gcccattcga	ccaccaagcg	aaacatcgca	tcgagcgagc	7260
acgtactcgg	atggaagccg	gtcttgtcga	tcaggatgat	ctggacgaag	agcatcaggg	7320
gctcgcgcca	gccgaactgt	tcgccaggct	caaggcgcgc	atgcccgcag	gcgaggatct	7380
cgtcgtgacc	catggcgatg	cctgcttgcc	gaatatcatg	gtggaaaatg	gccgcttttc	7440
tggaattcatc	gactgtggcc	ggctgggtgt	ggcggaccgc	tatcaggaca	tagcgttggc	7500
taccctgtgat	attgctgaag	agcttggcgg	cgaatgggct	gaccgcttcc	tcgtgcttta	7560
cggtatcgcc	gctcccgaat	cgacgcgat	cgcttcttat	cgcttcttgc	acgagttctt	7620
ctgaggatcc	actacgcggt	agagctcgct	gatcagcctc	gactgtgcct	tctagttgcc	7680
agccatctgt	tgtttgcccc	tccccctgct	cttcttgac	cctggaaggt	gccactccca	7740
ctgtcctttc	ctaataaaaat	gaggaaaattg	catcgcatgt	tctgagtagg	tgctattcta	7800
ttctgggggg	tggggtgggg	caggacagca	agggggagga	ttgggaagac	aatagcaggc	7860
atgtggggga	ctctctccgc	ttcctcgtc	actgactcgc	tgcgctcggg	gcttcggctg	7920
cggcgagcgg	tatcagctca	ctcaaaggcg	gtaatacggg	tatccacaga	atcaggggat	7980
aacgcaggaa	agaacatgtg	agcaaaaaggc	cagcaaaaagg	ccagggaaccg	taaaaaaggcc	8040

SEQLIST-20480.TXT

gcgttgctgg	cgtttttcca	taggctccgc	ccccctgacg	agcatcacaa	aaatcgacgc	8100
tcaagtcaga	ggtggcgaaa	cccgcagga	ctataaagat	accaggcggt	tccccctgga	8160
agctccctcg	tgcgctctcc	tgttccgacc	ctgccgctta	ccggatacct	gtccgccttt	8220
ctcccttcgg	gaagcgtggc	gctttctcaa	tgctcacgct	gtaggatatct	cagttcgggtg	8280
ctgaagcgtt	gctccaagct	gggctgtgtg	cacgaacccc	ccgttcagcc	cgaccgctgc	8340
gccttatccg	gtaactatcg	tcttgagtc	aacccggtaa	gacacgactt	atcgccactg	8400
gcagcagcca	ctggtaacag	gattagcaga	gcgaggtatg	taggcgggtg	tacagagttc	8460
ttgaagtgg	ggcctaacta	cggctacact	agaaggacag	tatttggtat	ctgcgctctg	8520
ctgaagccag	ttaccttcgg	aaaaagagtt	ggtagctctt	gatccggcaa	acaaaccacc	8580
gctggtagcg	gtggtttttt	tggttgcaag	cagcagatta	cgcgagaaa	aaaaggatct	8640
caagaagatc	ctttgatctt	ttctacgggg	tctgacgctc	agtggaaacga	aaactcacgt	8700
taagggattt	tggtcatgag	attatcaaaa	aggatcttca	cctagatcct	tttaaattaa	8760
aaatgaagtt	ttaaatcaat	ctaaagtata	tatgagtaaa	cttgggtctga	cagttaccaa	8820
tgcttaatca	gtgaggcacc	tatctcagcg	atctgtctat	ttcgttcatc	catagttgcc	8880
tgactccccg	tctgttagat	aactacgata	cgggagggct	taccatctgg	ccccagtgct	8940
gcaatgatac	cgcgagacc	acgctcaccg	gctccagatt	tatcagcaat	aaaccagcca	9000
gccggagccg	ccgagcgag	aagtggctct	gcaactttat	ccgcctccat	ccagtctatt	9060
aattgttgcc	gggaagctag	agtaagtagt	tccgaggtta	atagtttgcg	caacgttggt	9120
gccattgcta	caggcatcgt	ggtgtcacgc	tctgtctttg	gtatggcttc	attcagctcc	9180
ggttcccaac	gatcaaggcg	agttacatga	tcccccatgt	tgtgcaaaaa	agcgggttagc	9240
tccttcggtc	ctccgatcgt	tgtcagaagt	aagtgtggcg	cagtgttatc	actcatgggt	9300
atggcagcac	tgcataattc	tcttactgtc	atgccatccg	taagatgctt	ttctgtgact	9360
ggtgagtact	caaccaagtc	attctgagaa	tagtgtatgc	ggcgaccgag	ttgctcttgc	9420
ccggcgctca	tacgggatac	taccgcgcca	catagcagaa	ctttaaaagt	gctcatcatt	9480
ggaaaacggt	cttcggggcg	aaaactctca	aggatcttac	cgctgttgag	atccagttcg	9540
atgtaaccca	ctcgtgcacc	caactgatct	tcagcatctt	ttactttcac	cagcgtttct	9600
gggtgagcaa	aaacaggaag	gcaaaaatgc	gcaaaaaagg	gaataagggc	gacacggaaa	9660
tgttgaatac	tcatactctt	cctttttcaa	tattattgaa	gcatttatca	gggttattgt	9720
ctcatgagcg	gatacatatt	tgaatgtatt	tagaaaaata	aacaaatagg	ggttccgcgc	9780
acatttcccc	gaaaagtgcc	acctgacgtc	taagaaacca	ttattatcat	gacattaacc	9840
tataaaaata	ggcgatatcac	gaggcccttt	cgtc			9874

<210> 6582
 <211> 8293
 <212> DNA
 <213> Expression plasmid

<400> 6582						
tcgcgcgttt	cggtgatgac	ggtgaaaacc	tctgacacat	gcagctccccg	gagacgggtca	60
cagcttgctt	gtaagcggat	gccgggagca	gacaagccccg	tcaggggcgcg	tcagcgggtg	120
ttggcgggtg	tcggggctgg	cttaactatg	cggcatcaga	gcagattgta	ctgagagtgc	180
accatatgaa	gctttttgca	aaagcctagg	cctccaaaaa	agcctcctca	ctacttctgg	240
aatagctcag	aggccgaggc	ggcctcggcc	tctgcataaa	taaaaaaaat	tagtcagcca	300
tggggcgag	aatgggcgga	actgggcggg	gagggaaatta	ttggctattg	gccattgcat	360
acgttgatc	tatatcataa	tatgtacatt	tatatggct	catgtccaat	atgaccgcca	420
tgttgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacgggggtc	attagttcat	480
agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccgc	tggctgaccg	540
cccaacgacc	cccgccatt	gacgtcaata	atgacgtatg	ttcccatagt	aacgccaata	600
gggactttcc	attgacgtca	atgggtggag	tatttacggt	aaactgcccc	cttggcagta	660
catcaagtgt	atcataatgcc	aagtccgccc	cctattgacg	tcaatgacgg	taaatggccc	720
gcctggcatt	atgcccagta	catgacctta	cgggactttc	ctacttggca	gtacatctac	780
gtattagtca	tcgctattac	catggtgatg	cggttttggc	agtacaccaa	tgggcgtgga	840
tagcggtttg	actcacgggg	atttccaagt	ctccaccaca	ttgacgtcaa	tgggagtttg	900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgta	ataacccccg	cccgttgacg	960
caaatgggcg	gtaggcgtgt	acggtgggag	gtctatataa	gcagagctcg	tttagtgaac	1020
cgtcagatcg	cctggagacg	ccatccacgc	tgttttgacc	tccatagaag	acaccgggac	1080
cgatccagcc	tccgcggccg	ggaacggtgc	attggaacgc	ggattccccg	tgccaagagt	1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggtctttat	gcatgtctata	1200
ctgttttttg	cttggggcct	atacaccccc	gctccttatg	ctataggtga	tgggtatagct	1260
tagcctatag	gtgtgggtta	ttgaccatta	ttgaccactc	ccctattgggt	gacgatactt	1320
tccattacta	atccataaca	tggtcttttg	ccacaactat	ctctattggc	tatatgccaa	1380
tactctgtcc	ttcagagact	gacacggact	ctgtattttt	acaggatggg	gtccattttat	1440
tattttacaaa	ttcacatata	caacaacgcc	gtcccccggtg	cccgcagttt	ttattaaaca	1500

SEQLIST-20480.TXT

tagcgtggga	tctccgacat	ctcgggtacg	tgttccggac	atgggctctt	ctccggtagc	1560
ggcggagctt	ccacatccga	gccctggtcc	catccgtcca	gcggctcatg	gtcgtctggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtgtgccgc	acaaggccgt	ggcggtaggg	tatgtgtctg	aaaatgagct	cggagattgg	1740
gctcgacact	ggacgcagat	ggaagactta	aggcagcggc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccg	tgcgggtgctg	ttaacggtgg	1860
agggcagtg	agtctgagca	gtactcgttg	ctgccgcgcg	cgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgtcgaccgg	1980
tcgcgaattc	gtacgatata	ggcgcgcctc	gaggtcgaag	gcgcgccgcc	accatgttca	2040
tcttcctgct	gttcctgact	ctcactagtg	gtagtacct	tgaccggtgc	accacttttg	2100
atgatgttca	agctccta	tacactcaac	atacttcac	tatgaggggg	gtttactatc	2160
ctgatgaaat	ttttagatca	gacactcttt	atttaactca	ggatttattt	cttccatttt	2220
attctaattg	tacagggttt	catactatta	atcatacgtt	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tatttatttt	gctgccacag	agaaatcaaa	tgttgtccgt	ggttggtttt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaacaat	tctactaatg	2400
ttgttatacg	agcatgtaac	tttgaattgt	gtgacaaccc	tttctttgct	gtttctaaac	2460
ccatgggttg	acagacagat	actatgatat	atgtaatagc	atttaattgc	actttcagat	2520
acatactctga	tgccttttcg	cttgatgttt	cagaaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaaccta	2640
tagatgtagt	tcgtgatcta	ccttctgggt	ttaacacttt	gaaacctatt	tttaagttgc	2700
ctcttggttg	taacattaca	aattttagag	caattcttac	agccttttca	ctgctcaag	2760
acatttgggg	cacgtcagct	gcagcctatt	ttgttggtta	tttaaagcca	actacattta	2820
tgctcaagta	tgatgaaaa	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgtctgaat	caaagtctct	gttaagagct	ttgagattga	caaaggaatt	taccagacct	2940
ctaattttcac	ggttggtccc	tcaggagatg	ttgtgagatt	ccctaataat	acaaacttgt	3000
gtccttttgg	agagggtttt	aatgctacta	aatctccctt	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtgtt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
cctttaagtg	ctatggcggt	tcgcccacta	agttgaatga	tctttgcttc	tccaatgtct	3180
atgcatattc	ttttgtagtc	aaggagatg	atgtaagaca	aatagcgcca	gggcaacttg	3240
gtgttattgc	tgattataat	tataaattgc	cagatgatgt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tataggtatc	3360
ttagacatgg	caagcttagg	ccctttgaga	gagacatatc	taatgtgcct	ttctccccctg	3420
atggcaaac	taaggccgg	cctgtcttta	attgttatgt	gccattaaat	gattatgggt	3480
tttacaccac	tactggcatt	ggctaccaac	cttacagagt	tgtagtactt	tcttttgaac	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	cactgacctt	attaagaacc	3600
agtgtgtcaa	ttttaatttt	aatggactca	ctgggtactg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttgcc	gaatttggcc	gtgatgtttc	tgatttcact	gattccggtc	3720
gagatcctaa	aacatctgaa	atattagaca	tttcaccttg	ctcttttggg	ggtgtaagtg	3780
taattacacc	tggaaacaa	gcttcatctg	aagttgctgt	tctatatcaa	gatgttaact	3840
gcactgatgt	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caattgtatt	cagactcaag	cagcgtgtct	tataggagct	gagcatgtcg	3960
acacttctta	tgagtgcgac	attcctattg	gagctggcat	ttgtgctagt	taccatacac	4020
accaccacca	ccaccactaa	gcggccgcac	cgatagatct	cccgggtcta	gagggagacc	4080
acaacgggtt	ccctctagcg	ggatcaattc	cgcccccccc	cctaacgtta	ctggccgaag	4140
ccgcttggaa	taaggccgg	gtgcgtttgt	ctatatgtta	ttttccacca	tattgccgtc	4200
ttttggcaat	gtgagggccc	ggaaacctgg	ccctgtcttc	ttgacgagca	ttcctagggg	4260
tctttccctt	ctcgccaaag	gaatgcaagg	tctgttgaat	gtcgtgaagg	aagcagttcc	4320
tctggaagct	tcttgaagac	aaacaacgtc	tgtagcgacc	ctttgcaggc	agcggaaacc	4380
cccacttggc	gacaggtgcc	tctgcggcca	aaagccacgt	gtataagata	cacctgcaaa	4440
ggcggcacaa	ccccagtgcc	acgttgtag	ttggatagtt	gtggaaagag	tcaaatggct	4500
ctcctcaagc	gtattcaaca	aggggctgaa	ggatgccag	aaggtacccc	attgtatggg	4560
atctgatctg	gggcctcggt	gcacatgctt	tacatgtgtt	tagtcgaggt	taaaaaacgt	4620
ctaggccccc	cgaaccacgg	ggacgtgggt	ttcctttgaa	aaacacgata	ataccatggg	4680
tcgaccattg	aactgcatcg	tcgccgtgtc	ccaaaatatg	gggattggca	agaacggaga	4740
cctaccctgg	cctccgctca	ggaacgagtt	caagtacttc	caaagaatga	ccacaacctc	4800
ttcagtggaa	ggtaaacaga	atctggtgat	tatgggtagg	aaaacctggg	tctccatttc	4860
tgagaagaat	cgacctttaa	aggacagaat	taatatagtt	ctcagtagag	aactcaaaga	4920
accaccacga	ggagctcatt	ttcttgccaa	aagtttggat	gatgccttaa	gacttattga	4980
acaaccggaa	ttggcaagta	aagtagacat	ggtttgagata	gtcggaggca	gttctgttta	5040
ccaggaagcc	atgaatcaac	caggccacct	cagactcttt	gtgacaagga	tcatgcagga	5100
ctttgaaagt	gtcacgtttt	tcccagaaat	tgatttgggg	aaatataaac	ttctcccaga	5160
atacccgagg	gtcctctctg	aggtccagga	ggaaaaaggc	atcaagtata	agtttgaagt	5220
ctacgagaag	aaagacggag	gaggatccat	gattgaacaa	gatggattgc	acgcaggttc	5280

SEQLIST-20480.TXT

tccggccgct	tgggtggaga	ggctattcgg	ctatgactgg	gcacaacaga	caatcggctg	5340
ctctgatgcc	gccgtgttcc	ggctgtcagc	gcagggggcg	ccggttcttt	ttgtcaagac	5400
cgacctgtcc	ggtgccccta	atgaactgca	ggacgaggca	gcgcggctat	cgtggctggc	5460
cacgacgggc	gttctcttgc	cagctgtgct	cgagctgtgc	actgaagcgg	gaagggactg	5520
gctgtctatt	ggcgaagtgc	cggggcagga	tctcctgtca	tctcaccttg	ctcctgccga	5580
gaaagtatcc	atcatggctg	atgcaatgcg	gcggctgcat	acgcttgatc	cggctacctg	5640
cccattcgac	caccaagcga	aacatcgcat	cgagcgagca	cgtactcgga	tggaaagccg	5700
tcttgtcgat	caggatgatc	tggacgaaga	gcacagggg	ctcgcgccag	ccgaactggt	5760
cgccaggctc	aagggcgca	tgcccagcgg	cgaggatctc	gtcgtgaccc	atggcgatgc	5820
ctgcttgccg	aatatcatgg	tggaaaatgg	ccgcttttct	ggattcatcg	actgtggccg	5880
gctgggtgtg	gcggaccgct	atcaggacat	agcgttggct	acccgtgata	ttgctgaaga	5940
gcttggcggc	gaatgggctg	accgcttcct	cgtgctttac	ggtatcgccg	ctcccgatcc	6000
cgagcgatc	gccttcttga	gccttcttga	cgagttcttc	tgaggatcca	ctacgcgtta	6060
gagctcgctg	atcagcctcg	actgtgcctt	ctagtgtcca	gccatctgtt	gtttgcccct	6120
cccccgctgc	ttccttgacc	ctggaagggt	ccactcccac	tgtcctttcc	taataaaatg	6180
aggaaattgc	atcgcatgtg	ctgagtaggt	gtcattctat	tctggggggg	gggggtgggg	6240
aggacagcaa	tgggaagaga	tgggaagaga	gcgctcggtc	gttcggctgc	ggcgagcggg	6300
tcctcgctca	ctgactcgct	gcgctcggtc	tcaggggata	acgcaggaaa	gaacatgtga	6360
tcaaaggcgg	taatacgggt	atccacagaa	aaaaaggccg	cgttgctggc	gtttttccat	6420
gcaaaaggcc	agcaaaaggc	caggaaccgt	aaacaccgct	caagtacag	gtggcgaaac	6480
aggctccgcc	cccctgacga	aatcgacgct	ccccctggaa	gctccctcgt	gcgctctcct	6540
ccgacaggac	tataaagata	ccaggcggtt	tccgcctttc	tcccttcggg	aagcgtggcg	6600
gttccgaccc	tgccgcttac	cggatacctg	agttcggtgt	aggtcgctcg	ctccaagctg	6660
ctttctcaat	gctcacgctc	taggtatctc	cgttcagccc	ccttatccgg	taactatcgt	6720
ggctgtgtgc	acgaaccccc	cgttcagccc	acacgactta	tcgccactgg	cagcagccac	6780
cttgagtcca	acccggtaag	acacgactta	aggcgggtgt	acagagttct	tgaagtgggtg	6840
attagcagag	cgaggatgtg	aggcgggtgt	tgcgctctgc	tgaagccagt	gcctaactac	6900
ggctacacta	gaaggacagt	atcttggtatc	caaaccaccc	ctggtagcgg	taccttcgga	6960
aaaagagtgt	gtagctcttg	atccggcaaa	aaaggatctc	aagaagatcc	tggttttttt	7020
gtttgcaagc	agcagattac	gcgcagaaaa	aactcacgtt	aagggaattt	tttgatcttt	7080
tctacggggg	ctgacgctca	gtggaacgaa	aatgaagttt	aatgaagttt	ggtcatgaga	7140
ttatcaaaaa	ggatcttcac	ctagatcctt	ttaaattaaa	gcttaatcag	taaatcaatc	7200
ttaagtatat	atgagtaaac	ttgggtctga	agttaccaat	gactccccgt	tgaggcacct	7260
atctcagcga	tctgtctatt	tcgttcatcc	atagtgcctt	caatgatacc	cgtgtagata	7320
actacgatac	gggagggctt	accatctggc	cccagtgtcg	ccggaagggc	gcgagaccca	7380
cgctcaccgg	ctccagattt	atcagcaata	aaccagccag	cagtgtagcc	cgagcgacga	7440
agtgttcctg	caactttatc	cgccctccatc	cagtctatta	attgttgccg	ggaagctaga	7500
gtaagtagtt	cgccagttaa	tagtttgctc	aacgttggtg	ccatttgctac	aggcatcgtg	7560
gtgtcacgct	cgctgcttgg	tatggcttca	ttcagctccg	gttcccaacg	atcaaggcga	7620
gttacatgat	cccccatggt	gtgcaaaaaa	gcggtttagct	ccttcgggtc	tccgatcgtt	7680
gtcagaagta	agttggccgc	agtgttatca	ctcatgttta	tggcagcact	gcataattct	7740
cttactgtca	tgccatccgt	aagatgcttt	tctgtgactg	gtgagtactc	aaccaagtca	7800
ttctgagaat	agtgtatgcg	gcgaccgagt	tgctcttgcc	cggcgtcaat	acggggataat	7860
accgcgccac	atagcagaac	tttaaaagtg	ctcatcattg	gaaaacggtt	ttcggggcga	7920
aaactctcaa	ggatcttacc	gctgttgaga	tccagttcga	tgtaaccac	tcgtgcaccc	7980
aactgatctt	cagcatcttt	tactttcacc	agcgtttctg	ggtgagcaaa	aacaggaagg	8040
caaaatgccg	caaaaaagg	aataaggcgg	acaaggaaat	gttgaaatac	catactcttc	8100
ctttttcaat	attattgaag	catttatcag	ggttattgtc	tcatgagcgg	atacatattt	8160
gaatgtattt	agaaaaataa	acaaaatagg	gttccgcgca	catttccccg	aaaagtgcc	8220
cctgacgtct	aagaaacct	tattatcatg	acattaacct	ataaaaaatg	gcgtatcacg	8280
aggccctttc	gtc					8293

<210> 6583
 <211> 8275
 <212> DNA
 <213> Expression plasmid

<400>	6583					
tcgcgcggtt	cggtgatgac	ggtgaaaacc	tctgacacat	gcagctcccc	gagacgggtca	60
cagcttgctt	gtaagcggat	gccgggagca	gacaagcccc	tcagggcgcg	tcagcgggtg	120
ttggcgggtg	tcggggctgg	cttaactatg	cggcatcaga	gcagattgta	ctgagagtgc	180
accatatgaa	gctttttgca	aaagcctagg	cctccaaaaa	agcctcctca	ctacttctgg	240
aatagctcag	aggccgaggc	ggcctcggcc	tctgcataaa	taaaaaaaat	tagtcagcca	300

SEQLIST-20480.TXT

tggggaggag	aatgggaggag	actgggaggag	gagggagatta	ttggctattg	gccattgcat	360
acgttgatc	tatatcataa	tatgtacatt	tatatggct	catgtccaat	atgaccgcca	420
tggtgacatt	gattattgac	tagttattaa	tagtaatcaa	ttacggggc	attagttcat	480
agcccatata	tggagttccg	cgttacataa	cttacggtaa	atggcccgc	tggtgaccg	540
cccaacgacc	cccggccatt	gacgtcaata	atgacgtatg	ttcccatagt	aacgccaata	600
gggactttcc	attgacgtca	atgggtggag	tatttacggg	aaactgcca	cttggcagta	660
catcaagtgt	atcatatgcc	aagtccgccc	cctattgacg	tcaatgacgg	taaatggccc	720
gcctggcatt	atgcccagta	catgacctta	cgggactttc	ctacttggca	gtacatctac	780
gtattagtca	tcgctattac	catgggtgatg	cggttttggc	agtacaccaa	tgggctgga	840
tagcggtttg	actcacgggg	atttccaagt	ctccacccca	ttgacgtcaa	tgggagtttg	900
ttttggcacc	aaaatcaacg	ggactttcca	aaatgtcgtta	ataaccccgc	cccgttgacg	960
caaatgggag	gtaggcggtg	acgggtggag	gtctatataa	gcagagctcg	tttagtgaac	1020
cgtcagatcg	ctcgggagcg	ccatccacgc	tgttttgacc	tccatagaag	acaccgggac	1080
cgatccagcc	tccgaggccg	ggaacgggtg	attggaacgc	ggattccccg	tgccaagagt	1140
gacgtaagta	ccgcctatag	actctatagg	cacacccctt	tggctcttat	gcatgctata	1200
ctgttttttg	cttggggcct	atacaccccc	gctccttatg	ctatagggtga	tggtatagct	1260
tagcctatag	tgtgggttta	ttgaccatta	ttgaccactc	ccctattggg	gacgatactt	1320
tccattacta	atccataaca	tggtctcttg	ccacaactat	ctctattggc	tatatgccaa	1380
tactctgtcc	ttcagagact	gacacggact	ctgtattttt	acaggatggg	gtccattttat	1440
tattttacaaa	ttcacatata	caacaacgcc	gtcccccggtg	cccgcagttt	ttattaaaca	1500
tagcgtggga	tctccgacat	ctcgggtacg	tggtttcgac	atgggctctt	ctccggtagc	1560
ggcggagctt	ccacatccga	gccctggtcc	catccgtcca	gaggctcatg	gtcgtctggc	1620
agctccttgc	tcctaacagt	ggaggccaga	cttaggcaca	gcacaatgcc	caccaccacc	1680
agtggtccgc	acaaggccgt	ggcggtaggg	tatgtgtctg	aaaatgagct	cggagattgg	1740
gctcgcacct	ggacgcagat	ggaagactta	aggcagcgcc	agaagaagat	gcaggcagct	1800
gagttgttgt	attctgataa	gagtcagagg	taactcccgt	tgcggtgctg	ttaacggtgg	1860
agggcagtg	agtctgagca	gtactcgttg	ctgccgcgcg	cgccaccaga	cataatagct	1920
gacagactaa	cagactgttc	ctttccatgg	gtcttttctg	cagtcaccgt	cgtcgaccgg	1980
tcgcgaattc	gtacgatata	ggcgcgcctc	gaggtcggaag	gcgcgcgcgc	accatgttca	2040
tcttctgtct	gttcttgact	ctcactagt	gtagtgcct	tgaccggtgc	accacttttg	2100
atgatgttca	agctccta	tacactcaac	atacttcatc	tatgaggggg	gtttactatc	2160
ctgatgaaat	ttttagatca	gacactcttt	atttaactca	ggattttatt	cttccatttt	2220
attctaattg	tacagggttt	catactatta	atcatacgtt	tggcaaccct	gtcatacctt	2280
ttaaggatgg	tattttattt	gctgccacag	agaaatcaaa	tggtgtccgt	ggttgggttt	2340
ttggttctac	catgaacaac	aagtcacagt	cggtgattat	tattaacaat	tctactaatg	2400
ttgtttatag	agcatgtaac	tttgaattgt	gtgacaaccc	tttctttgct	gtttctaaac	2460
ccatgggtac	acagatgata	actatgat	tcgataatgc	atttaattgc	actttcagat	2520
acatatctga	tgccttttcg	cttgatgttt	cagaaaagtc	aggtaatttt	aaacacttac	2580
gagagtttgt	gtttaaaaat	aaagatgggt	ttctctatgt	ttataagggc	tatcaacct	2640
tagatgtagt	tcgtgatcta	ccttctgggt	ttaacacttt	gaaacctatt	tttaagtgc	2700
ctcttggtat	taacattaca	caattttagag	ccattcttac	agccttttca	cctgctcaag	2760
acatttgagg	cacgtcagct	gcagcctatt	ttgttggtta	tttaagcca	actacattta	2820
tgctcaagta	tgatgaaaat	ggtacaatca	cagatgctgt	tgattgttct	caaaatccac	2880
ttgctgaact	caaagtctct	gttaagagct	ttgagattga	caaaggaatt	taccagacct	2940
ctaatttcag	ggttggtccc	tcaggagatg	ttgtgagatt	ccctaataat	acaaacttgt	3000
gtcctttttg	agagggtttt	aatgctacta	aatcccttcc	tgtctatgca	tgggagagaa	3060
aaaaaatttc	taattgtgtt	gctgattact	ctgtgctcta	caactcaaca	tttttttcaa	3120
cctttaagtg	ctatggcggt	tctgccacta	agttgaatga	tctttgcttc	tccaatgtct	3180
atgcagattc	ttttgtagtc	aaggagatg	atgtaagaca	aatagcgcca	gggcaaactg	3240
gtgttattgc	tgattataat	tataaattgc	cagatgattt	catgggttgt	gtccttgctt	3300
ggaatactag	gaacattgat	gctacttcaa	ctggtaatta	taattataaa	tatagggtatc	3360
ttagacattg	caagcttagg	ccctttgaga	gagacatatc	taatgtgcct	ttctcccctg	3420
atggcaaac	ttgcacccca	cctgctctta	attgttattg	gccattaaat	gattatgggt	3480
tttacaccac	tactggcatt	ggctaccaac	cttacagagt	tgtagtactt	tcttttgaac	3540
ttttaaatgc	accggccacg	gtttgtggac	caaaattatc	cactgacctt	attaagaacc	3600
agtgtgtcaa	ttttaatttt	aatggactca	ctgggtactg	tgtgttaact	ccttcttcaa	3660
agagatttca	accatttcaa	caatttggcc	gtgatgtttc	tgatttcact	gattccggtc	3720
gagatcctaa	aacatctgaa	atattagaca	tttcaccttg	ctcttttggg	ggtgtaagt	3780
taattacacc	tggaacaaat	gcttcatctg	aagttgctgt	tctatatcaa	gatgttaact	3840
gcactgtagt	ttctacagca	attcatgcag	atcaactcac	accagcttgg	cgcatatatt	3900
ctactggaaa	caatgtattc	cagactcaag	caggctgtct	tataggagct	gagcatgtcg	3960
acacttctta	tgagtgcgac	attcctattg	gagctggcat	ttgtgctagt	taccatacat	4020
aagcggccgc	atcgatagat	ctcccgggtc	tagagggaga	ccacaacggg	ttccctctag	4080

SEQLIST-20480.TXT

cgggatcaat	tccgcccccc	cccctaacgt	tactggccga	agccgcttgg	aataaggccg	4140
gtgtgctgtt	gtctatatgt	tattttccac	catattgccc	tcttttggca	atgtgagggc	4200
ccggaacct	ggccctgtct	tcttgacgag	cattcctagg	gggtctttccc	ctctcgccaa	4260
aggaatgcaa	ggtctgttga	atgtcgtgaa	ggaagcagtt	cctctggaag	cttcttgaag	4320
acaaacaacg	tctgtagcga	ccctttgacg	gcagcggaac	ccccacctg	gcgacaggtg	4380
cctctgctgg	caaaagccac	gtgtataaga	tacacctgca	aaggcgccac	aacccagtg	4440
ccacgttgtg	agttggatag	ttgtggaaa	agtcaaatgg	ctctcctcaa	gcgtattcaa	4500
caaggggctg	aaggatgccc	agaaggtagc	ccattgtatg	ggatctgac	tggggcctcg	4560
gtgcacatgc	tttacaatgt	tttagtcgag	gttaaaaaac	gtctaggccc	cccgaaccac	4620
ggggacgtgg	ttttcctttg	aaaaacacga	taataccatg	gttcgaccat	tgaactgcat	4680
cgctcgccgtg	tcccaaaata	tggggattgg	caagaacgga	gacctaccct	ggcctccgct	4740
caggaacgag	ttcaagtact	tccaaagaat	gaccacaacc	tcttcagtgg	aaggtaaaaca	4800
gaatctgggt	attatgggta	ggaaaacgtg	gttctccatt	cctgagaaga	atcgaccttt	4860
aaaggacaga	attaatatag	ttctcagtag	agaactcaaa	gaaccaccac	gaggagctca	4920
ttttcttgcc	aaaagtttgg	atgatgcctt	aagacttatt	gaacaaccgg	aattggcaag	4980
taaagtagac	atggtttggg	tagtcggagg	cagttctgtt	taccaggaag	ccatgaatca	5040
accagcctac	ctcagtgatg	ttgtgacaa	gattcatcgag	gaatttgaaa	gtgacacgtt	5100
tttcccgaa	attgatttgg	ggaaatataa	acttctccca	gaatacccag	gcgtcctctc	5160
tgaggtccag	gaggaaaaa	gcataagta	taagtttgaa	gtctacgaga	agaaagacgg	5220
aggaggatcc	atgattgaac	aagatggatt	gcacgcaggt	tctccggccg	cttgggtgga	5280
gaggcttctt	gaatgagcag	gggcacacaa	gacaaatcgc	tgctctgatg	ccgcccgtgt	5340
ccggctgtca	gcgcaggggc	gcccggttct	ttttgtcaag	accgacctgt	ccggtgccct	5400
gaatgaactg	caggacgagg	cagcgcggct	atcgtggctg	gccacgacgg	gcgttccttg	5460
cgagctgtg	ctcgacgttg	tcactgaagc	gggaagggac	tggttgctat	tgggcgaagt	5520
gccgggcttc	gatctcctgt	catctcacct	tgctcctgcc	gagaaagtat	ccatcatggc	5580
tgatgcaatg	cggcggctgc	atacgttga	tccggctacc	tgcccatctg	accaccaagc	5640
gaaacatcgc	atcgagcgag	cacgtactcg	gatggaagcc	ggctttgtcg	atcaggatga	5700
tctggacgaa	gagcatcagg	ggctcgcgcc	agccgaactg	ttcgccaggc	tcaaggcgcg	5760
catgcccagc	ggcgaggatc	tcgtcgtgac	ccatggcgat	gcctgcttgc	cgaatatcat	5820
ggtggaaaat	ggccgctttt	ctggattcat	cgactgtggc	cggctgggtg	tggcggaccg	5880
ctatcaggac	atagcgttgg	ctacccgtga	tattgtctgaa	gagcttgccg	gcgaatgggc	5940
tgaccgcttc	ctcgtgcttt	acggtatcgc	cgctcccgat	tcgcagcgca	tcgccttcta	6000
tcgccccttc	tctgaggatg	tctgagcgt	tgtagctcgc	tagagctcgc	tgatcagcct	6060
cgactgtgcc	ttctagttag	cagccatctg	ttgtttgccc	ctccccctg	ccttccttga	6120
ccctggaagg	tgccactccc	actgtccttt	cctaataaaa	tgaggaaatt	gcatacgatt	6180
gtctgagtag	gtgtcattct	attctggggg	gtgggggtgg	gcaggacagc	aagggggagg	6240
attgggaaga	caatagcagg	catgctgggg	agctcttccg	cttctctgct	cactgactcg	6300
ctgcgctcgg	tcgttcggct	gcggcgagcg	gtatcagctc	actcaaaggc	ggtaatacgg	6360
ttatccacag	aatcagggga	taacgcagga	aagaacatgt	gagcaaaaag	ccagcaaaaag	6420
gccaggaacc	gtaaaaaggg	cgctttgctg	gcgtttttcc	ataggctccg	cccccttgac	6480
gacgctcaca	aaaatcgagc	ctcaagttag	agtggtcgaa	acccgacagg	actataaaga	6540
taccaggcgt	ttccccctgg	aagctccctc	gtgcgctctc	ctgttccgac	cctgccgctt	6600
accggatacc	tgtccgcctt	tctcccttcg	ggaagcgtgg	cgctttctca	atgctcacgc	6660
tgtaggatc	tcagttcggt	gtaggtcgtt	cgctccaagc	tgggctgtgt	gcacgaaccc	6720
cccgttcagc	ccgaccgtg	cgccttatcc	ggtaactatc	gtcttgagtc	caaccggta	6780
agacacgact	tatcgccact	ggcagcagcc	actggtaaca	ggattagcag	agcgaggat	6840
gtaggcggtg	ctacagagtt	cttgaagtgg	tggcctaact	acggctacac	tagaaggaca	6900
gtatttggtg	tctgcgctct	gctgaagcca	gttaccttgc	gaaaaagagt	tggtagctct	6960
tgatccggca	aacaaaccac	cgctggtagc	gggtgttttt	ttgtttgcaa	gcagcagatt	7020
acgcgcagaa	aaaaaggatc	tcaagaagat	cctttgatct	tttctacggg	gtctgacgct	7080
cagtggaaacg	aaaactcacg	ttaagggatt	ttggtcatga	gattatcaaa	aaggatcttc	7140
acctagatcc	ttttaaatga	aaaatgaagt	tttaaatcaa	tctaaagtat	atatgagtaa	7200
acttgggtcg	acagttacca	atgcttaatc	agtgaggcac	ctatctcagc	gatctgtcta	7260
tttcgttcat	ccatagttag	ctgactcccc	gtcgtgtaga	taactacgat	acgggagggc	7320
ttaccatctg	gccccagtg	tgcaatgata	ccgcgagacc	cacgctcacc	ggctccagat	7380
ttatcagcaa	ttaaccagcc	agccggaagg	gccgagcgca	gaagtggctc	tgcaacttta	7440
tccgcctcca	tccagtctat	taattgttgc	cgggaagcta	gagtaagtag	ttcgccagtt	7500
aatagtttgc	gcaacgttgt	tgccattgct	acagggcatcg	tgggtgtcacg	ctcgtcgttt	7560
ggtatggctt	cattcagctc	cggttcccaa	cgatcaaggc	gagttacatg	atcccccatg	7620
ttgtgcaaaa	aagcggttag	ctccttcggt	cctccgatcg	ttgtcagaag	taagttggcc	7680
gcagtgttat	cactcatggg	tatggcagca	ctgcataaatt	ctcttactgt	catgccatcc	7740
gtaagatgct	tttctgtgac	tgggtgagtag	tcaaccaagt	cattctgaga	atagtgtag	7800
cggcgaccga	gttgctcttg	cccggcgtca	atacgggata	ataccgcgcc	acatagcaga	7860

SEQLIST-20480.TXT

acttttaaag	tgctcatcat	tggaaaacgt	tcttcggggc	gaaaactctc	aaggatctta	7920
ccgctgttga	gatccagttc	gatgtaaccc	actcgtgcac	ccaactgac	ttcagcatct	7980
tttactttca	ccagcgtttc	tgggtgagca	aaaacaggaa	ggcaaaatgc	cgcaaaaaag	8040
ggaataaggg	cgacacggaa	atgttgaata	ctcatactct	tcctttttca	atattattga	8100
agcattttatc	agggttattg	tctcatgagc	ggatacatat	ttgaatgtat	ttagaaaaat	8160
aaacaaatag	gggttccgcg	cacatttccc	cgaaaagtgc	cacctgacgt	ctaagaaacc	8220
attattatca	tgacattaac	ctataaaaat	aggcgtatca	cgaggccctt	tcgtc	8275

<210> 6584
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6584
 tacacacctc agcgttg 17

<210> 6585
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6585
 cacgaacgtg acgaat 16

<210> 6586
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<220>
 <221> misc_feature
 <222> 21...26
 <223> N is any nucleotide

<400> 6586
 gccggagctc tgcagaattc nnnnnn 26

<210> 6587
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 6587
 gccggagctc tgcagaattc 20

<210> 6588
 <211> 16
 <212> PRT
 <213> SARS coronavirus

<400> 6588

SEQLIST-20480.TXT

Leu Pro Arg Lys Ser Gln Pro Thr Ser Ile Ser Cys Arg Ser Val Leu
1 5 10 15

<210> 6589
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 6589
Thr Asn Phe Lys Ile Cys Val Ala Val Ala Arg Leu His Ala
1 5 10

<210> 6590
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6590
Cys Thr Tyr Ala Val
1 5

<210> 6591
<211> 40
<212> PRT
<213> SARS coronavirus

<400> 6591
Thr Ile Ile Asn Phe Thr Val Val Asp Lys Lys Arg Val Thr Arg Pro
1 5 10 15

Ser Ser Ala Asp Cys Leu Arg Phe Arg Pro Cys Cys Ser Arg Ser Ser
20 25 30

Ala Tyr Leu Gly Phe Val Arg Val
35 40

<210> 6592
<211> 4386
<212> PRT
<213> SARS coronavirus

<400> 6592
Pro Lys Gly Lys Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr
1 5 10 15

His Val Gln Leu Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val
20 25 30

Arg Gly Phe Gly Asp Ser Val Glu Glu Ala Leu Ser Glu Ala Arg Glu
35 40 45

His Leu Lys Asn Gly Thr Cys Gly Leu Val Glu Leu Glu Lys Gly Val
50 55 60

Leu Pro Gln Leu Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala
65 70 75 80

Leu Ser Thr Asn His Gly His Lys Val Val Glu Leu Val Ala Glu Met
85 90 95

Asp Gly Ile Gln Tyr Gly Arg Ser Gly Ile Thr Leu Gly Val Leu Val
100 105 110

SEQLIST-20480.TXT

Pro His Val Gly Glu Thr Pro Ile Ala Tyr Arg Asn Val Leu Leu Arg
115 120 125
Lys Asn Gly Asn Lys Gly Ala Gly Gly His Ser Tyr Gly Ile Asp Leu
130 135 140
Lys Ser Tyr Asp Leu Gly Asp Glu Leu Gly Thr Asp Pro Ile Glu Asp
145 150 155 160
Tyr Glu Gln Asn Trp Asn Thr Lys His Gly Ser Gly Ala Leu Arg Glu
165 170 175
Leu Thr Arg Glu Leu Asn Gly Gly Ala Val Thr Arg Tyr Val Asp Asn
180 185 190
Asn Phe Cys Gly Pro Asp Gly Tyr Pro Leu Asp Cys Ile Lys Asp Phe
195 200 205
Leu Ala Arg Ala Gly Lys Ser Met Cys Thr Leu Ser Glu Gln Leu Asp
210 215 220
Tyr Ile Glu Ser Lys Arg Gly Val Tyr Cys Cys Arg Asp His Glu His
225 230 235 240
Glu Ile Ala Trp Phe Thr Glu Arg Ser Asp Lys Ser Tyr Glu His Gln
245 250 255
Thr Pro Phe Glu Ile Lys Ser Ala Lys Lys Phe Asp Thr Phe Lys Gly
260 265 270
Glu Cys Pro Lys Phe Val Phe Pro Leu Asn Ser Lys Val Lys Val Ile
275 280 285
Gln Pro Arg Val Glu Lys Lys Lys Thr Glu Gly Phe Met Gly Arg Ile
290 295 300
Arg Ser Val Tyr Pro Val Ala Ser Pro Gln Glu Cys Asn Asn Met His
305 310 315 320
Leu Ser Thr Leu Met Lys Cys Asn His Cys Asp Glu Val Ser Trp Gln
325 330 335
Thr Cys Asp Phe Leu Lys Ala Thr Cys Glu His Cys Gly Thr Glu Asn
340 345 350
Leu Val Ile Glu Gly Pro Thr Thr Cys Gly Tyr Leu Pro Thr Asn Ala
355 360 365
Val Val Lys Met Pro Cys Pro Ala Cys Gln Asp Pro Glu Ile Gly Pro
370 375 380
Glu His Ser Val Ala Asp Tyr His Asn His Ser Asn Ile Glu Thr Arg
385 390 395 400
Leu Arg Lys Gly Gly Arg Thr Arg Cys Phe Gly Gly Cys Val Phe Ala
405 410 415
Tyr Val Gly Cys Tyr Asn Lys Arg Ala Tyr Trp Val Pro Arg Ala Ser
420 425 430
Ala Asp Ile Gly Ser Gly His Thr Gly Ile Thr Gly Asp Asn Val Glu
435 440 445

SEQLIST-20480.TXT

Thr Leu Asn Glu Asp Leu Leu Glu Ile Leu Ser Arg Glu Arg Val Asn
 450 455 460
 Ile Asn Ile Val Gly Asp Phe His Leu Asn Glu Glu Val Ala Ile Ile
 465 470 475 480
 Leu Ala Ser Phe Ser Ala Ser Thr Ser Ala Phe Ile Asp Thr Ile Lys
 485 490 495
 Ser Leu Asp Tyr Lys Ser Phe Lys Thr Ile Val Glu Ser Cys Gly Asn
 500 505 510
 Tyr Lys Val Thr Lys Gly Lys Pro Val Lys Gly Ala Trp Asn Ile Gly
 515 520 525
 Gln Gln Arg Ser Val Leu Thr Pro Leu Cys Gly Phe Pro Ser Gln Ala
 530 535 540
 Ala Gly Val Ile Arg Ser Ile Phe Ala Arg Thr Leu Asp Ala Ala Asn
 545 550 555 560
 His Ser Ile Pro Asp Leu Gln Arg Ala Ala Val Thr Ile Leu Asp Gly
 565 570 575
 Ile Ser Glu Gln Ser Leu Arg Leu Val Asp Ala Met Val Tyr Thr Ser
 580 585 590
 Asp Leu Leu Thr Asn Ser Val Ile Ile Met Ala Tyr Val Thr Gly Gly
 595 600 605
 Leu Val Gln Gln Thr Ser Gln Trp Leu Ser Asn Leu Leu Gly Thr Thr
 610 615 620
 Val Glu Lys Leu Arg Pro Ile Phe Glu Trp Ile Glu Ala Lys Leu Ser
 625 630 635 640
 Ala Gly Val Glu Phe Leu Lys Asp Ala Trp Glu Ile Leu Lys Phe Leu
 645 650 655
 Ile Thr Gly Val Phe Asp Ile Val Lys Gly Gln Ile Gln Val Ala Ser
 660 665 670
 Asp Asn Ile Lys Asp Cys Val Lys Cys Phe Ile Asp Val Val Asn Lys
 675 680 685
 Ala Leu Glu Met Cys Ile Asp Gln Val Thr Ile Ala Gly Ala Lys Leu
 690 695 700
 Arg Ser Leu Asn Leu Gly Glu Val Phe Ile Ala Gln Ser Lys Gly Leu
 705 710 715 720
 Tyr Arg Gln Cys Ile Arg Gly Lys Glu Gln Leu Gln Leu Leu Met Pro
 725 730 735
 Leu Lys Ala Pro Lys Glu Val Thr Phe Leu Glu Gly Asp Ser His Asp
 740 745 750
 Thr Val Leu Thr Ser Glu Glu Val Val Leu Lys Asn Gly Glu Leu Glu
 755 760 765
 Ala Leu Glu Thr Pro Val Asp Ser Phe Thr Asn Gly Ala Ile Val Gly
 770 775 780

SEQLIST-20480.TXT

Thr 785 Pro Val Cys Val Asn 790 Gly Leu Met Leu 795 Leu Glu Ile Lys Asp Lys 800
 Glu Gln Tyr Cys Ala 805 Leu Ser Pro Gly Leu 810 Leu Ala Thr Asn Asn Val 815
 Phe Arg Leu Lys 820 Gly Gly Ala Pro Ile 825 Lys Gly Val Thr Phe 830 Gly Glu
 Asp Thr Val 835 Trp Glu Val Gln Gly 840 Tyr Lys Asn Val Arg 845 Ile Thr Phe
 Glu Leu 850 Asp Glu Arg Val Asp 855 Lys Val Leu Asn Glu 860 Lys Cys Ser Val
 Tyr 865 Thr Val Glu Ser Gly 870 Thr Glu Val Thr Glu 875 Phe Ala Cys Val Val 880
 Ala Glu Ala Val Val 885 Lys Thr Leu Gln Pro 890 Val Ser Asp Leu Leu 895 Thr
 Asn Met Gly Ile 900 Asp Leu Asp Glu Trp 905 Ser Val Ala Thr Phe 910 Tyr Leu
 Phe Asp Asp 915 Ala Gly Glu Glu Asn 920 Phe Ser Ser Arg Met 925 Tyr Cys Ser
 Phe Tyr 930 Pro Pro Asp Glu Glu 935 Glu Glu Asp Asp Ala 940 Glu Cys Glu Glu
 Glu 945 Glu Ile Asp Glu Thr 950 Cys Glu His Glu Tyr 955 Gly Thr Glu Asp Asp 960
 Tyr Gln Gly Leu Pro 965 Leu Glu Phe Gly Ala 970 Ser Ala Glu Thr Val 975 Arg
 Val Glu Glu Glu 980 Glu Glu Glu Asp Trp 985 Leu Asp Asp Thr Thr 990 Glu Gln
 Ser Glu Ile 995 Glu Pro Glu Pro Glu 1000 Thr Pro Glu Glu 1005 Pro Val Asn
 Gln Phe Thr Gly Tyr Leu Lys 1010 Leu Thr Asp Asn Val 1020 Ala Ile Lys Cys
 Val Asp Ile Val Lys 1025 Glu Ala Gln Ser Ala Asn 1035 Pro Met Val Ile Val 1040
 Asn Ala Ala Asn Ile 1045 His Leu Lys His Gly 1050 Gly Gly Val Ala Gly 1055 Ala
 Leu Asn Lys Ala 1060 Thr Asn Gly Ala Met 1065 Gln Lys Glu Ser Asp Asp Tyr
 Ile Lys Leu 1075 Asn Gly Pro Leu Thr 1080 Val Gly Gly Ser Cys 1085 Leu Leu Ser
 Gly His Asn Leu Ala Lys 1090 Lys Cys Leu His Val Val 1100 Gly Pro Asn Leu
 Asn Ala Gly Glu Asp Ile 1105 Gln Leu Leu Lys Ala Ala Tyr Glu Asn Phe 1120

SEQLIST-20480.TXT

Asn Ser Gln Asp Ile Leu Leu Ala Pro Leu Leu Ser Ala Gly Ile Phe
 1125 1130 1135
 Gly Ala Lys Pro Leu Gln Ser Leu Gln Val Cys Val Gln Thr Val Arg
 1140 1145 1150
 Thr Gln Val Tyr Ile Ala Val Asn Asp Lys Ala Leu Tyr Glu Gln Val
 1155 1160 1165
 Val Met Asp Tyr Leu Asp Asn Leu Lys Pro Arg Val Glu Ala Pro Lys
 1170 1175 1180
 Gln Glu Glu Pro Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser
 1185 1190 1195 1200
 Val Val Gln Lys Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile
 1205 1210 1215
 Asp Glu Val Thr Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys
 1220 1225 1230
 Leu Leu Leu Phe Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln
 1235 1240 1245
 Asn Met Leu Arg Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro
 1250 1255 1260
 Tyr Met Val Gly Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val
 1265 1270 1275 1280
 Ile Pro Ser Lys Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala
 1285 1290 1295
 Leu Lys Lys Val Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln
 1300 1305 1310
 Gly Cys Ala Gly Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys
 1315 1320 1325
 Cys Lys Ser Ala Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys
 1330 1335 1340
 Glu Glu Ile Leu Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala
 1345 1350 1355 1360
 His Ala Glu Glu Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg
 1365 1370 1375
 Ala Ile Met Ala Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln
 1380 1385 1390
 Glu Gly Ile Val Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys
 1395 1400 1405
 Glu Pro Val Ala Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro
 1410 1415 1420
 Leu Val Thr Met Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu
 1425 1430 1435 1440
 Glu Ala Ala Arg Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser
 1445 1450 1455

SEQLIST-20480.TXT

Val Ser Ser Pro Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser
1460 1465 1470

Ser Ser Lys Thr Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala
1475 1480 1485

Gly Ser Tyr Arg Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly
1490 1495 1500

Val Glu Phe Leu Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu
1505 1510 1515 1520

Ser Pro Val Glu Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys
1525 1530 1535

Leu Lys Ser Leu Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe
1540 1545 1550

Thr Thr Val Asp Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser
1555 1560 1565

Met Thr Tyr Gly Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp
1570 1575 1580

Val Thr Lys Ile Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe
1585 1590 1595 1600

Val Leu Pro Ser Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr
1605 1610 1615

His Thr Leu Asp Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn
1620 1625 1630

His Thr Lys Lys Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile
1635 1640 1645

Lys Trp Ala Asp Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu
1650 1655 1660

Gln Gln Leu Glu Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr
1665 1670 1675 1680

Tyr Arg Ala Arg Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu
1685 1690 1695

Ala Tyr Ser Asn Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr
1700 1705 1710

Met Thr His Leu Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val
1715 1720 1725

Leu Asn Val Val Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr
1730 1735 1740

Gly Val Glu Ala Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu
1745 1750 1755 1760

Lys Thr Gly Val Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln
1765 1770 1775

Tyr Leu Val Gln Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro
1780 1785 1790

SEQLIST-20480.TXT

Ala Glu Tyr Lys Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr
1795 1800 1805

Thr Gly Asn Tyr Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu
1810 1815 1820

Thr Leu Tyr Arg Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr
1825 1830 1835 1840

Lys Gly Pro Val Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr
1845 1850 1855

Thr Ile Lys Pro Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu
1860 1865 1870

Ile Glu Pro Lys Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr
1875 1880 1885

Thr Glu Gln Pro Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala
1890 1895 1900

Ser Phe Asp Asn Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp
1905 1910 1915 1920

Asp Leu Asn Gln Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu
1925 1930 1935

Ser Val Thr Phe Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp
1940 1945 1950

Tyr Arg His Tyr Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His
1955 1960 1965

Lys Pro Ile Val Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe
1970 1975 1980

Lys Pro Asn Thr Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val
1985 1990 1995 2000

Asp Thr Ser Asn Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly
2005 2010 2015

Met Asp Asn Leu Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val
2020 2025 2030

Val Glu Asn Pro Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys
2035 2040 2045

Thr Thr Glu Val Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly
2050 2055 2060

Val Lys Val Thr Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr
2065 2070 2075 2080

Val Glu Asn Thr Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu
2085 2090 2095

Ala Leu Gly Leu Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn
2100 2105 2110

Ser Val Pro Trp Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly
2115 2120 2125

SEQLIST-20480.TXT

Gln Ala Ala Ile Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg
2130 2135 2140

Val Phe Asn Asn Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu
2145 2150 2155 2160

Cys Thr Phe Thr Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro
2165 2170 2175

Thr Thr Ile Ala Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu
2180 2185 2190

Asp Ala Gly Ile Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe
2195 2200 2205

Thr Ile Ala Met Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu
2210 2215 2220

Ile Cys Val Thr Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala
2225 2230 2235 2240

Pro Ser Tyr Cys Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn
2245 2250 2255

Val Thr Thr Met Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys
2260 2265 2270

Leu Ser Gly Leu Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile
2275 2280 2285

Gln Val Thr Ile Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu
2290 2295 2300

Ala Ala Glu Trp Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr
2305 2310 2315 2320

Leu Leu Gly Leu Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala
2325 2330 2335

Ser His Phe Ile Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile
2340 2345 2350

Val Gln Met Ala Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe
2355 2360 2365

Ala Ser Phe Tyr Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly
2370 2375 2380

Cys Thr Ser Ser Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr
2385 2390 2395 2400

Arg Val Glu Cys Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr
2405 2410 2415

Val Tyr Ala Asn Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn
2420 2425 2430

Cys Leu Asn Cys Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp
2435 2440 2445

Glu Val Ala Arg Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro
2450 2455 2460

SEQLIST-20480.TXT

Thr Asp Gln Ser Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly
 2465 2470 2475 2480
 Ala Leu His Leu Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg
 2485 2490 2495
 His Pro Leu Ser His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn
 2500 2505 2510
 Thr Lys Gly Ser Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser
 2515 2520 2525
 Lys Cys Asp Glu Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln
 2530 2535 2540
 Leu Met Cys Gln Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp
 2545 2550 2555 2560
 Val Gly Asp Ser Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val
 2565 2570 2575
 Asp Thr Phe Ser Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala
 2580 2585 2590
 Leu Val Ala Thr Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp
 2595 2600 2605
 Gly Val Leu Ser Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp
 2610 2615 2620
 Thr Asp Val Asp Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His
 2625 2630 2635 2640
 His Ser Asp Leu Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu
 2645 2650 2655
 Thr Tyr Asn Lys Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys
 2660 2665 2670
 Ile Asp Cys Asn Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His
 2675 2680 2685
 Asn Val Ser Leu Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu
 2690 2695 2700
 Gln Leu Arg Lys Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro
 2705 2710 2715 2720
 Phe Arg Leu Thr Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr
 2725 2730 2735
 Thr Lys Ile Ser Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys
 2740 2745 2750
 Leu Met Leu Lys Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys
 2755 2760 2765
 Tyr Ile Val Met Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr
 2770 2775 2780
 Asn Glu Ile Ile Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp
 2785 2790 2795 2800

SEQLIST-20480.TXT

Ile Ile Ser Thr Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp
2805 2810 2815
Ala Trp Phe Ser Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys
2820 2825 2830
Pro Val Val Ala Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro
2835 2840 2845
Gly Leu Pro Gly Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His
2850 2855 2860
Phe Leu Pro Arg Val Phe Ser Ala Val Gly Asn Ile Cys Tyr Thr Pro
2865 2870 2875 2880
Ser Lys Leu Ile Glu Tyr Ser Asp Phe Ala Thr Ser Ala Cys Val Leu
2885 2890 2895
Ala Ala Glu Cys Thr Ile Phe Lys Asp Ala Met Gly Lys Pro Val Pro
2900 2905 2910
Tyr Cys Tyr Asp Thr Asn Leu Leu Glu Gly Ser Ile Ser Tyr Ser Glu
2915 2920 2925
Leu Arg Pro Asp Thr Arg Tyr Val Leu Met Asp Gly Ser Ile Ile Gln
2930 2935 2940
Phe Pro Asn Thr Tyr Leu Glu Gly Ser Val Arg Val Val Thr Thr Phe
2945 2950 2955 2960
Asp Ala Glu Tyr Cys Arg His Gly Thr Cys Glu Arg Ser Glu Val Gly
2965 2970 2975
Ile Cys Leu Ser Thr Ser Gly Arg Trp Val Leu Asn Asn Glu His Tyr
2980 2985 2990
Arg Ala Leu Ser Gly Val Phe Cys Gly Val Asp Ala Met Asn Leu Ile
2995 3000 3005
Ala Asn Ile Phe Thr Pro Leu Val Gln Pro Val Gly Ala Leu Asp Val
3010 3015 3020
Ser Ala Ser Val Val Ala Gly Gly Ile Ile Ala Ile Leu Val Thr Cys
3025 3030 3035 3040
Ala Ala Tyr Tyr Phe Met Lys Phe Arg Arg Val Phe Gly Glu Tyr Asn
3045 3050 3055
His Val Val Ala Ala Asn Ala Leu Leu Phe Leu Met Ser Phe Thr Ile
3060 3065 3070
Leu Cys Leu Val Pro Ala Tyr Ser Phe Leu Pro Gly Val Tyr Ser Val
3075 3080 3085
Phe Tyr Leu Tyr Leu Thr Phe Tyr Phe Thr Asn Asp Val Ser Phe Leu
3090 3095 3100
Ala His Leu Gln Trp Phe Ala Met Phe Ser Pro Ile Val Pro Phe Trp
3105 3110 3115 3120
Ile Thr Ala Ile Tyr Val Phe Cys Ile Ser Leu Lys His Cys His Trp
3125 3130 3135

SEQLIST-20480.TXT

Phe Phe Asn Asn Tyr Leu Arg Lys Arg Val Met Phe Asn Gly Val Thr
 3140 3145 3150
 Phe Ser Thr Phe Glu Glu Ala Ala Leu Cys Thr Phe Leu Leu Asn Lys
 3155 3160 3165
 Glu Met Tyr Leu Lys Leu Arg Ser Glu Thr Leu Leu Pro Leu Thr Gln
 3170 3175 3180
 Tyr Asn Arg Tyr Leu Ala Leu Tyr Asn Lys Tyr Lys Tyr Phe Ser Gly
 3185 3190 3195 3200
 Ala Leu Asp Thr Thr Ser Tyr Arg Glu Ala Ala Cys Cys His Leu Ala
 3205 3210 3215
 Lys Ala Leu Asn Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln
 3220 3225 3230
 Pro Pro Gln Thr Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg
 3235 3240 3245
 Lys Met Ala Phe Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val
 3250 3255 3260
 Thr Cys Gly Thr Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val
 3265 3270 3275 3280
 Tyr Cys Pro Arg His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro
 3285 3290 3295
 Asn Tyr Glu Asp Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val
 3300 3305 3310
 Gln Ala Gly Asn Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn
 3315 3320 3325
 Cys Leu Leu Arg Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys
 3330 3335 3340
 Tyr Lys Phe Val Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala
 3345 3350 3355 3360
 Cys Tyr Asn Gly Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro
 3365 3370 3375
 Asn His Thr Ile Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val
 3380 3385 3390
 Gly Phe Asn Ile Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His
 3395 3400 3405
 Met Glu Leu Pro Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys
 3410 3415 3420
 Phe Tyr Gly Pro Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr
 3425 3430 3435 3440
 Asp Thr Thr Ile Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val
 3445 3450 3455
 Ile Asn Gly Asp Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn
 3460 3465 3470

SEQLIST-20480.TXT

Asp Phe Asn Leu Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln
 3475 3480 3485
 Asp His Val Asp Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala
 3490 3495 3500
 Val Leu Asp Met Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met
 3505 3510 3515 3520
 Asn Gly Arg Thr Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr
 3525 3530 3535
 Pro Phe Asp Val Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys
 3540 3545 3550
 Phe Lys Lys Ile Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe
 3555 3560 3565
 Leu Thr Ser Leu Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe
 3570 3575 3580
 Phe Phe Val Tyr Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met
 3585 3590 3595 3600
 Ala Ile Ala Ala Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe
 3605 3610 3615
 Leu Cys Leu Phe Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn
 3620 3625 3630
 Met Val Tyr Met Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu
 3635 3640 3645
 Glu Leu Ala Asp Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val
 3650 3655 3660
 Met Tyr Ala Ser Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr
 3665 3670 3675 3680
 Val Tyr Asp Asp Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile
 3685 3690 3695
 Thr Leu Val Tyr Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile
 3700 3705 3710
 Ser Met Trp Ala Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val
 3715 3720 3725
 Val Thr Thr Ile Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val
 3730 3735 3740
 Glu Tyr Tyr Pro Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile
 3745 3750 3755 3760
 Met Leu Val Tyr Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly
 3765 3770 3775
 Leu Phe Cys Leu Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr
 3780 3785 3790
 Asp Tyr Leu Val Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly
 3795 3800 3805

SEQLIST-20480.TXT

Leu 3810 Leu Pro Pro Lys Ser Ser Ile Asp Ala Phe Lys 3820 Leu Asn Ile Lys
 Leu 3825 Leu Gly Ile Gly Gly Lys 3830 Pro Cys Ile Lys 3835 Val Ala Thr Val Gln 3840
 Ser Lys Met Ser 3845 Asp Val Lys Cys Thr Ser 3850 Val Val Leu Leu Ser 3855 Val
 Leu Gln Gln Leu 3860 Arg Val Glu Ser Ser 3865 Ser Lys Leu Trp Ala 3870 Gln Cys
 Val Gln Leu 3875 His Asn Asp Ile Leu 3880 Leu Ala Lys Asp Thr Thr Glu Ala
 Phe 3890 Glu Lys Met Val Ser Leu 3895 Leu Ser Val Leu 3900 Leu Ser Met Gln Gly
 Ala 3905 Val Asp Ile Asn Arg Leu 3910 Cys Glu Glu Met 3915 Leu Asp Asn Arg Ala 3920
 Thr Leu Gln Ala 3925 Ile Ala Ser Glu Phe Ser 3930 Ser Leu Pro Ser Tyr Ala 3935
 Ala Tyr Ala Thr 3940 Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala 3950 Asn Gly
 Asp Ser 3955 Glu Val Val Leu Lys Lys 3960 Leu Lys Lys Ser 3965 Leu Asn Val Ala
 Lys 3970 Ser Glu Phe Asp Arg Asp 3975 Ala Ala Met Gln Arg 3980 Lys Leu Glu Lys
 Met 3985 Ala Asp Gln Ala Met 3990 Thr Gln Met Tyr Lys 3995 Gln Ala Arg Ser Glu 4000
 Asp Lys Arg Ala 4005 Lys Val Thr Ser Ala Met 4010 Gln Thr Met Leu Phe Thr 4015
 Met Leu Arg 4020 Lys Leu Asp Asn Asp Ala 4025 Leu Asn Asn Ile Ile 4030 Asn Asn
 Ala Arg Asp Gly Cys Val Pro 4040 Leu Asn Ile Ile Pro 4045 Leu Thr Thr Ala
 Ala 4050 Lys Leu Met Val Val Val 4055 Pro Asp Tyr Gly Thr Tyr Lys Asn Thr
 Cys 4065 Asp Gly Asn Thr Phe Thr Tyr Ala Ser Ala 4075 Leu Trp Glu Ile Gln 4080
 Gln Val Val Asp 4085 Ala Asp Ser Lys Ile Val 4090 Gln Leu Ser Glu Ile Asn 4095
 Met Asp Asn Ser Pro Asn Leu Ala Trp 4105 Pro Leu Ile Val Thr Ala Leu 4110
 Arg Ala Asn Ser Ala Val Lys 4115 Leu Gln Asn Asn Glu Leu 4125 Ser Pro Val
 Ala 4130 Leu Arg Gln Met Ser Cys 4135 Ala Ala Gly Thr Thr Gln Thr Ala Cys 4140

SEQLIST-20480.TXT

Thr Asp Asp Asn Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg
4145 4150 4155 4160
Phe Val Leu Ala Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg
4165 4170 4175
Phe Pro Lys Ser Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro
4180 4185 4190
Pro Cys Arg Phe Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr
4195 4200 4205
Leu Tyr Phe Ile Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu
4210 4215 4220
Gly Ser Leu Ala Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu
4225 4230 4235 4240
Val Pro Ala Asn Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp
4245 4250 4255
Pro Ala Lys Ala Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile
4260 4265 4270
Thr Asn Cys Val Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala
4275 4280 4285
Ile Thr Val Thr Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly
4290 4295 4300
Ala Ser Cys Cys Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro
4305 4310 4315 4320
Lys Gly Phe Cys Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr
4325 4330 4335
Cys Ala Asn Asp Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr
4340 4345 4350
Val Cys Gly Met Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg
4355 4360 4365
Glu Pro Leu Met Gln Ser Ala Asp Ala Ser Thr Phe Leu Asn Gly Phe
4370 4375 4380

Ala Val
4385

<210> 6593
<211> 34
<212> PRT
<213> SARS coronavirus

<400> 6593
Val Gln Pro Val Leu His Arg Ala Ala Gln Ala Leu Val Leu Met Ser
1 5 10 15
Ser Thr Gly Leu Leu Ile Phe Thr Thr Lys Lys Leu Leu Val Leu Gln
20 25 30

Ser Ser

SEQLIST-20480.TXT

<210> 6594
 <211> 16
 <212> PRT
 <213> SARS coronavirus

<400> 6594
 Lys Leu Ile Ala val Ala Ser Arg Arg Arg Met Arg Lys Ala Ile Tyr
 1 5 10 15

<210> 6595
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6595
 Thr Leu Thr Leu
 1

<210> 6596
 <211> 34
 <212> PRT
 <213> SARS coronavirus

<400> 6596
 Leu Arg Gly Ile Leu Cys Leu Thr Thr Asn Met Lys Arg Leu Phe Ile
 1 5 10 15

Thr Trp Leu Lys Ile Val Gln Arg Leu Leu Ser Met Thr Phe Ser Ser
 20 25 30

Leu Glu

<210> 6597
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6597
 Met Val Thr Trp Tyr His Ile Tyr His Val Ser Val
 1 5 10

<210> 6598
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6598
 Leu Asn Thr Gln Trp Leu Ile
 1 5

<210> 6599
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 6599
 Ser Met Leu Tyr val Ile Leu Met Arg val Ile val Ile His
 1 5 10

<210> 6600

SEQLIST-20480.TXT

<211> 23
 <212> PRT
 <213> SARS coronavirus

<400> 6600
 Lys Lys Tyr Ser Ser His Thr Ile Ala Val Met Met Ile Ile Ser Ile
 1 5 10 15

Arg Arg Ile Gly Met Thr Ser
 20

<210> 6601
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 6601
 Arg Ile Leu Thr Ser Tyr Ala Tyr Met Leu Thr
 1 5 10

<210> 6602
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6602
 Val Ser Val Tyr Ala Asn His Tyr
 1 5

<210> 6603
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 6603
 Arg Leu Tyr Asn Ser Ala Met Leu Cys Val Met Gln Ala Leu
 1 5 10

<210> 6604
 <211> 17
 <212> PRT
 <213> SARS coronavirus

<400> 6604
 Ile Ile Arg Ile Leu Met Gly Thr Gly Thr Ile Ser Val Ile Ser Tyr
 1 5 10 15

Lys

<210> 6605
 <211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 6605
 His Gln Ala Ala Glu Phe Leu Leu Trp Ile His Ile Thr His Cys
 1 5 10 15

<210> 6606
 <211> 5
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6606
Cys Pro Ser Ser Leu
1 5

<210> 6607
<211> 23
<212> PRT
<213> SARS coronavirus

<400> 6607
Leu Gly His Trp Leu Leu Ser Pro Ile Trp Met Leu Ile Ser Gln Asn
1 5 10 15

His Leu Leu Ser Gly Ile Cys
20

<210> 6608
<211> 57
<212> PRT
<213> SARS coronavirus

<400> 6608
Asn Met Ile Leu Arg Lys Arg Asp Phe Val Ser Ser Thr Val Ile Leu
1 5 10 15

Asn Ile Gly Thr Arg His Thr Ile Pro Ile Val Leu Thr Val Trp Met
20 25 30

Ile Gly Val Ser Phe Ile Val Gln Thr Leu Met Cys Tyr Phe Leu Leu
35 40 45

Cys Phe His Leu Gln Val Leu Asp His
50 55

<210> 6609
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6609
Glu Lys Tyr Leu
1

<210> 6610
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6610
Met Val Phe Leu Leu Leu Phe Gln Leu Asp Thr Ile Phe Val Ser
1 5 10 15

<210> 6611
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6611
Glu Ser Tyr Ile Ile Arg Met
1 5

<210> 6612

SEQLIST-20480.TXT

<211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6612
 Thr Tyr Ile Ala Arg Val Ser Val Ser Arg Asn Phe
 1 5 10

<210> 6613
 <211> 16
 <212> PRT
 <213> SARS coronavirus

<400> 6613
 Cys Met Leu Leu Ile Gln Leu Cys Met Gln Leu Leu Ala Ile Tyr Cys
 1 5 10 15

<210> 6614
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6614
 Ile Asn Ala Leu His Ala Phe Gln
 1 5

<210> 6615
 <211> 35
 <212> PRT
 <213> SARS coronavirus

<400> 6615
 Gln Thr Met Leu Leu Phe Lys Leu Ser Asn Pro Val Ile Leu Ile Lys
 1 5 10 15

Thr Phe Met Thr Leu Leu Cys Leu Lys Val Ser Leu Arg Lys Glu Val
 20 25 30

Leu Leu Asn
 35

<210> 6616
 <211> 34
 <212> PRT
 <213> SARS coronavirus

<400> 6616
 Asn Thr Ser Ser Leu Leu Arg Met Ala Thr Leu Leu Ser Val Ile Met
 1 5 10 15

Thr Ile Ile Val Ile Ile Cys Gln Gln Cys Val Ile Ser Asp Asn Ser
 20 25 30

Tyr Ser

<210> 6617
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 6617

SEQLIST-20480.TXT

Leu Lys Leu Leu Ile Asn Thr Leu Ile Val Thr Met Val Ala Val Leu
1 5 10 15

Met Pro Thr Lys
20

<210> 6618
<211> 25
<212> PRT
<213> SARS coronavirus

<400> 6618
Ser Leu Thr Ile Trp Ile Asn Gln Leu Val Ser His Leu Ile Asn Gly
1 5 10 15

Val Arg Leu Asp Phe Ile Met Thr Gln
20 25

<210> 6619
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6619
Val Met Arg Ile Lys Met His Phe Ser Arg Ile Leu Ser Val Met Ser
1 5 10 15

Ser Leu Leu

<210> 6620
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 6620
Ile Leu Ser Met Pro Leu Val Gln Arg Ile Glu Leu Ala Pro
1 5 10

<210> 6621
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6621
Leu Val Ser Leu Ser Val Val Leu
1 5

<210> 6622
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6622
Gln Ile Asp Ser Phe Ile Arg Asn Tyr
1 5

<210> 6623
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6623

Pro Pro Leu Glu Glu Leu Leu Trp
1 5

<210> 6624
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 6624
Leu Glu Gln Ala Ser Phe Thr Val Ala Gly Ile Ile Cys
1 5 10

<210> 6625
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6625
Lys Leu Phe Thr Val Met
1 5

<210> 6626
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 6626
Lys Leu His Thr Leu Trp Val Gly Ile Ile Gln Asn Val Thr Glu Pro
1 5 10 15

Cys Leu Thr Cys Leu Gly
20

<210> 6627
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 6627
Trp Pro Leu Leu Phe Leu Leu Ala Asn Ile Thr Leu Ala Val Thr Tyr
1 5 10 15

His Thr Val Ser Thr Gly
20

<210> 6628
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6628
Leu Thr Ser Val Arg Lys Tyr
1 5

<210> 6629
<211> 40
<212> PRT
<213> SARS coronavirus

<400> 6629
Val Arg Trp Ser Cys Val Ala Ala His Tyr Met Leu Asn Gln Val Glu
1 5 10 15

SEQLIST-20480.TXT

His His Pro Val Met Leu Gln Leu Leu Met Leu Ile Val Ser Leu Thr
20 25 30

Phe Val Lys Leu Leu Gln Pro Met
35 40

<210> 6630
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6630
Met His Phe Phe Gln Leu Met Val Ile Arg
1 5 10

<210> 6631
<211> 39
<212> PRT
<213> SARS coronavirus

<400> 6631
Leu Thr Ser Met Ser Ala Ile Tyr Asn Thr Gly Ser Met Ser Val Ser
1 5 10 15

Ile Glu Ile Gly Met Leu Ile Met Asn Ser Trp Met Ser Phe Thr Leu
20 25 30

Thr Cys Val Asn Ile Ser Pro
35

<210> 6632
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 6632
Phe Phe Leu Met Met Pro Leu Cys Ala Ile Thr Val Thr Met Arg Leu
1 5 10 15

Lys Val

<210> 6633
<211> 42
<212> PRT
<213> SARS coronavirus

<400> 6633
Leu Ala Leu Arg Thr Leu Arg Gln Phe Phe Ile Ile Lys Ile Met Cys
1 5 10 15

Ser Cys Leu Arg Gln Asn Val Gly Leu Arg Leu Thr Leu Leu Lys Asp
20 25 30

Leu Thr Asn Phe Ala His Ser Ile Gln Cys
35 40

<210> 6634
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 6634

SEQLIST-20480.TXT

Leu Asn Lys Glu Met Ile Thr Cys Thr Cys Leu Thr Gln Ile His Gln
1 5 10 15

Glu Tyr

<210> 6635
<211> 16
<212> PRT
<213> SARS coronavirus

<400> 6635
Ala Gln Ala Val Leu Ser Met Ile Leu Ser Lys Gln Met Val His Leu
1 5 10 15

<210> 6636
<211> 49
<212> PRT
<213> SARS coronavirus

<400> 6636
Leu Lys Gly Ser Cys His Trp Leu Leu Met Leu Thr His Leu Gln Asn
1 5 10 15

Ile Leu Ile Arg Ser Met Leu Met Ser Phe Thr Cys Ile Tyr Asn Thr
20 25 30

Leu Glu Ser Tyr Met Met Ser Leu Leu Ala Thr Cys Trp Thr Cys Ile
35 40 45

Pro

<210> 6637
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 6637
Leu Met Ile Thr Pro His Gly Thr Gly Asn Leu Ser Phe Met Arg Leu
1 5 10 15

Cys Thr His His Ile Gln Ser Cys Arg Leu
20 25

<210> 6638
<211> 38
<212> PRT
<213> SARS coronavirus

<400> 6638
Val Leu Val Tyr Cys Ala Ile His Arg Leu His Phe Val Ala Val Pro
1 5 10 15

Val Leu Gly Asp His Ser Tyr Val Ala Ser Ala Ala Met Thr Met Ser
20 25 30

Phe Gln His His Thr Asn
35

<210> 6639
<211> 18

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6639
Cys Cys Leu Leu Ile Pro Met Phe Ala Met Pro Gln Val Val Met Ser
1 5 10 15

Leu Met

<210> 6640
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6640
His Asn Cys Ile
1

<210> 6641
<211> 29
<212> PRT
<213> SARS coronavirus

<400> 6641
Ala Ile Ile Ala Ser His Ile Ser Leu Pro Leu Val Phe His Tyr Val
1 5 10 15

Leu Met Val Arg Phe Leu Val Tyr Thr Lys Thr His Val
20 25

<210> 6642
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6642
Ala Val Thr Met Ser Leu Thr Ser Met Arg
1 5 10

<210> 6643
<211> 66
<212> PRT
<213> SARS coronavirus

<400> 6643
Gln His Val Ile Gly Leu Met Leu Ala Ile Thr Tyr Leu Pro Thr Leu
1 5 10 15

Val Leu Arg Asp Ser Ser Phe Ser Gln Gln Lys Arg Ser Lys Pro Leu
20 25 30

Arg Lys His Leu Ser Cys His Met Val Leu Pro Leu Tyr Ala Lys Tyr
35 40 45

Ser Leu Thr Glu Asn Cys Ile Phe His Gly Arg Leu Glu Asn Leu Asp
50 55 60

His His
65

<210> 6644
<211> 10

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6644
Thr Glu Thr Met Ser Leu Leu Val Thr Val
1 5 10

<210> 6645
<211> 31
<212> PRT
<213> SARS coronavirus

<400> 6645
Leu Lys Ile Val Lys Tyr Arg Leu Glu Ser Thr Pro Leu Lys Lys Val
1 5 10 15
Thr Met Val Met Leu Leu Cys Thr Glu Val Leu Arg His Thr Ser
20 25 30

<210> 6646
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6646
Met Leu Val Ile Thr Leu Cys
1 5

<210> 6647
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6647
His Leu Thr Leu
1

<210> 6648
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6648
Cys His Leu Val His Leu Leu
1 5

<210> 6649
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6649
Cys His Lys Ser Thr Met
1 5

<210> 6650
<211> 56
<212> PRT
<213> SARS coronavirus

<400> 6650
Glu Leu Leu Ala Cys Thr Gln His Ser Thr Ser Gln Met Ser Phe Leu
1 5 10 15

SEQLIST-20480.TXT

Ala Met Leu Gln Ile Ile Lys Arg Ser Ala Cys Lys Ser Thr Leu His
20 25 30

Ser Lys Asp His Leu Val Leu Val Arg Val Ile Leu Pro Ser Asp Leu
35 40 45

Leu Ser Ile Thr His Leu Leu Ala
50 55

<210> 6651
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6651
Cys Ile Arg His Ala Leu Met Gln Leu Leu Met Pro Tyr Val Lys Arg
1 5 10 15

His

<210> 6652
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6652
Asn Ile Cys Pro
1

<210> 6653
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 6653
Ile Asn Val Val Glu Ser Tyr Leu Arg Val Arg Ala
1 5 10

<210> 6654
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6654
Ser Val Leu Ile Asn Ser Lys
1 5

<210> 6655
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6655
Asn Ser Met Phe Ser Ala Leu
1 5

<210> 6656
<211> 10
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6656
Met His Cys Gln Lys Gln Leu Leu Thr Leu
1 5 10

<210> 6657
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 6657
Ser Leu Met Lys Ser Leu Trp Leu Leu Ile Met Thr
1 5 10

<210> 6658
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6658
Val Leu Ser Met Leu Asp Phe Val Gln Asn Thr Thr Ser Ile Leu Ala
1 5 10 15

Ile Leu Leu Asn Tyr Gln Pro Pro Ala His Cys
20 25

<210> 6659
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6659
Leu Lys Ala His
1

<210> 6660
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6660
Asn Gln Asn Ile Leu Ile Gln Cys Ala Asp Leu
1 5 10

<210> 6661
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6661
Val Gln Thr Cys Ser Leu Glu Leu Val Ala Val Val Leu Leu Lys Leu
1 5 10 15

Leu Thr Leu

<210> 6662
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6662
Phe Met Thr Ile Ser
1 5

SEQLIST-20480.TXT

<210> 6663
 <211> 31
 <212> PRT
 <213> SARS coronavirus

<400> 6663
 Lys His Thr Arg Ile Ser Gln Leu Asn Ala Ser Lys Cys Ser Thr Lys
 1 5 10 15
 Val Leu Leu His Met Met Phe His Leu Gln Ser Thr Asp Leu Lys
 20 25 30

<210> 6664
 <211> 24
 <212> PRT
 <213> SARS coronavirus

<400> 6664
 Glu Asn Phe Leu His Ala Ile Leu Leu Gly Glu Lys Leu Phe Leu Ser
 1 5 10 15
 His Leu Ile Ile His Arg Thr Leu
 20

<210> 6665
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6665
 Leu Gln Lys Ser
 1

<210> 6666
 <211> 48
 <212> PRT
 <213> SARS coronavirus

<400> 6666
 Asp Cys Leu Arg Arg Leu Leu Ile His His Arg Val Leu Asn Met Thr
 1 5 10 15
 Met Ser Tyr Ser His Lys Leu Leu Lys Gln His Thr Leu Val Met Ser
 20 25 30
 Thr Ala Ser Met Trp Leu Ser Gln Gly Gln Lys Leu Ala Phe Cys Ala
 35 40 45

<210> 6667
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 6667
 Cys Leu Ile Glu Ile Phe Met Thr Asn Cys Asn Leu Gln Val
 1 5 10

<210> 6668
 <211> 14
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6668
Lys Tyr His Val Ala Met Trp Leu His Tyr Lys Gln Lys Met
1 5 10

<210> 6669
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 6669
Leu Asp Phe Leu Arg Thr Val Val Arg Ser Leu Leu Val Phe Ile Leu
1 5 10 15
His Arg His Leu His Thr Ser Ala Leu Ile
20 25

<210> 6670
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6670
Ser Ser Arg Leu Lys Asp Tyr Val Leu Thr Tyr Gln Ala Tyr Gln Arg
1 5 10 15

Thr

<210> 6671
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6671
Pro Thr Val Asp Ser Ser Leu
1 5

<210> 6672
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6672
Trp Val Ser Lys
1

<210> 6673
<211> 28
<212> PRT
<213> SARS coronavirus

<400> 6673
Ile Thr Lys Ser Met Val Thr Leu Ile Cys Leu Ser Pro Ala Lys Lys
1 5 10 15

Leu Phe Val Thr Phe Val Arg Gly Leu Ala Leu Met
20 25

<210> 6674
<211> 17
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6674
Arg Ala Val Met Gln Leu Glu Met Leu Trp Val Leu Thr Tyr Leu Ser
1 5 10 15

Ser

<210> 6675
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6675
Asp Phe Leu Gln Val Leu Thr
1 5

<210> 6676
<211> 42
<212> PRT
<213> SARS coronavirus

<400> 6676
Leu Tyr Arg Leu Val Met Leu Thr Leu Lys Ile Thr Gln Asn Ser Pro
1 5 10 15

Glu Leu Met Gln Asn Leu His Gln Val Thr Ser Leu Asn Ile Leu Tyr
20 25 30

His Ser Cys Ile Lys Ala Cys Pro Gly Met
35 40

<210> 6677
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6677
Cys Val Leu Arg
1

<210> 6678
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6678
Tyr Lys Cys Ser Val Ile His
1 5

<210> 6679
<211> 20
<212> PRT
<213> SARS coronavirus

<400> 6679
Lys Asp Cys Gln Thr Glu Ser Cys Ser Ser Phe Gly Arg Met Ala Leu
1 5 10 15

Ser Leu His Gln
20

<210> 6680

SEQLIST-20480.TXT

<211> 45
 <212> PRT
 <213> SARS coronavirus

<400> 6680
 Ser Thr Leu Ser Arg Leu Asp Leu Lys Glu Arg Val Val Cys Val Thr
 1 5 10 15
 Asn Val Gln Leu Ala Phe Leu Leu His Gln Ile Leu Met Pro Ala Gly
 20 25 30
 Ile Ile Leu Trp Val Leu Thr Met Ser Ile Thr His Leu
 35 40 45

<210> 6681
 <211> 34
 <212> PRT
 <213> SARS coronavirus

<400> 6681
 Leu Met Phe Ser Ser Gly Ala Leu Arg Val Thr Phe Arg Val Thr Met
 1 5 10 15
 Thr Asn Ile Ala Arg Tyr Met Glu Met His Met Trp Leu Val Val Met
 20 25 30
 Leu Ser

<210> 6682
 <211> 18
 <212> PRT
 <213> SARS coronavirus

<400> 6682
 Gln Ser Met Ser Ala Leu Leu Ser Ala Leu Ile Gly Leu Leu Asn Thr
 1 5 10 15
 Leu Leu

<210> 6683
 <211> 13
 <212> PRT
 <213> SARS coronavirus

<400> 6683
 Gly Leu Ile Leu Leu Ala Glu Lys Tyr Asn Thr Trp Leu
 1 5 10

<210> 6684
 <211> 28
 <212> PRT
 <213> SARS coronavirus

<400> 6684
 Ser Leu His Cys Leu Leu Ile Ser Phe Gln Phe Phe Met Thr Leu Glu
 1 5 10 15
 Ile Gln Arg Leu Ser Ser Val Cys Leu Arg Leu Lys
 20 25

<210> 6685

SEQLIST-20480.TXT

<211> 16
<212> PRT
<213> SARS coronavirus

<400> 6685
Asn Gly Ser Ser Thr Met Leu Ser His Val Val Thr Lys Leu Thr Lys
1 5 10 15

<210> 6686
<211> 45
<212> PRT
<213> SARS coronavirus

<400> 6686
Arg Asn Ser Ser Ile Leu Met Leu His Ile Thr Ile Asn Ser Leu Met
1 5 10 15

Val Phe Val Cys Phe Gly Ile Val Thr Leu Ile Val Thr Gln Pro Met
20 25 30

Gln Leu Cys Val Gly Leu Thr Gln Glu Ser Cys Gln Thr
35 40 45

<210> 6687
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6687
Thr Tyr Gln Ala Val Met Val Val Val Cys Met
1 5 10

<210> 6688
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6688
Ile Ser Met His Ser Thr Leu Gln Leu Ser Ile Lys Val His Leu Leu
1 5 10 15

Ile

<210> 6689
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6689
Ser Asn Cys Leu Ser Phe Thr Ile Leu Ile Val Leu Val Ser Leu Met
1 5 10 15

Ala Asn Lys

<210> 6690
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6690

SEQLIST-20480.TXT

Cys Arg Ile Leu Ile Met Phe His Ser Asn Leu Leu Arg Val Leu His
1 5 10 15

Asp Ala Ile

<210> 6691
<211> 20
<212> PRT
<213> SARS coronavirus

<400> 6691
Val Val Leu Phe Ala Asp Thr Met Gln Met Ser Thr Asp Ser Thr Trp
1 5 10 15

Met His Ile Ile
20

<210> 6692
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6692
Phe Leu Leu Asp Leu Ala Tyr Gly Phe Thr Asn Asn Leu Ile Leu Ile
1 5 10 15

Thr Cys Gly Ile His Leu Pro Gly Tyr Arg Val
20 25

<210> 6693
<211> 32
<212> PRT
<213> SARS coronavirus

<400> 6693
Lys Met Trp Leu Ile Met Leu Leu Ile Lys Asp Thr Leu Met Asp Thr
1 5 10 15

Pro Ala Lys His Leu Phe Pro Ser Leu Ile Met Leu Phe Thr Gln Arg
20 25 30

<210> 6694
<211> 48
<212> PRT
<213> SARS coronavirus

<400> 6694
Met Val Leu Met Trp Arg Ser Leu Lys Ile Arg Gln His Phe Leu Leu
1 5 10 15

Met Leu His Leu Ser Phe Gly Leu Ser Val Thr Leu Asn Gln Cys Gln
20 25 30

Arg Leu Arg Tyr Ser Ile Ile Trp Val Leu Ile Ser Leu Leu Ile Leu
35 40 45

<210> 6695
<211> 14
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6695
Ser Gly Thr Thr Lys Glu Lys Pro Gln His Met Tyr Leu Gln
1 5 10

<210> 6696
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6696
Val Ser Ala Gln
1

<210> 6697
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 6697
Leu Thr Leu Pro Arg Asn Leu Leu Arg Val Leu Val Leu His Leu Leu
1 5 10 15

Ser Cys Leu Met Val Glu Trp Lys Asp Arg
20 25

<210> 6698
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6698
Thr Phe Leu Glu Thr Pro Val Met Val phe
1 5 10

<210> 6699
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6699
Gln Lys Val Gln Ser Lys Val
1 5

<210> 6700
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6700
His Leu Gln Arg Asp Gln His Lys Leu Ala Ser Met Glu Ser His
1 5 10 15

<210> 6701
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6701
Leu Glu Asn Gln
1

<210> 6702

SEQLIST-20480.TXT

<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6702
Lys His Ser Leu Thr Thr Leu Arg Lys
1 5

<210> 6703
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6703
Thr Ala Leu Phe Asn Ser Cys Leu Lys Pro Thr Leu Leu Arg Ala Glu
1 5 10 15

Thr

<210> 6704
<211> 49
<212> PRT
<213> SARS coronavirus

<400> 6704
Arg Ile Leu Ser Pro Asp His Lys Trp Lys Leu Thr Phe Ser Ser Ser
1 5 10 15

Leu Trp Met Asn Ser Tyr Ser Asp Ile Ser Ser Arg Ala Met Pro Ser
20 25 30

Asn Thr Ser Phe Met Glu Ile Ser Val Met Asp Asn Leu Ala Val Phe
35 40 45

Ile

<210> 6705
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6705
Pro Ser Ala His Lys Ile His His Leu Asn
1 5 10

<210> 6706
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6706
Arg Ile Leu Ser Leu Trp Thr Ala Gln
1 5

<210> 6707
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6707
Lys Ile Thr Ser

1

<210> 6708
 <211> 13
 <212> PRT
 <213> SARS coronavirus

<400> 6708
 Gln Met Arg Lys Gln Val His Gln Asn Val Cys Val Leu
 1 5 10

<210> 6709
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 6709
 Leu Ile Phe Tyr Leu Met Thr Leu Ser Arg
 1 5 10

<210> 6710
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6710
 Ser His Lys Ile Cys Gln
 1 5

<210> 6711
 <211> 72
 <212> PRT
 <213> SARS coronavirus

<400> 6711
 Phe Gln Lys Trp Ser Arg Leu Gln Leu Thr Met Leu Lys Phe His Ser
 1 5 10 15

Cys Phe Gly Val Arg Met Asp Met Leu Lys Pro Ser Thr Gln Asn Tyr
 20 25 30

Lys Gln Val Glu Arg Gly Asn Gln Val Leu Arg Cys Leu Thr Cys Thr
 35 40 45

Arg Cys Lys Glu Cys Phe Leu Lys Ser Val Thr Phe Arg Ile Met Val
 50 55 60

Lys Met Leu Leu Tyr Gln Lys Glu
 65 70

<210> 6712
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 6712
 Met Ser Gln Ser Ile Leu Asn Cys Val Asn Thr
 1 5 10

<210> 6713
 <211> 4
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6713
Ile His Leu Leu
1

<210> 6714
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6714
Leu Tyr Pro Thr Thr
1 5

<210> 6715
<211> 45
<212> PRT
<213> SARS coronavirus

<400> 6715
Glu Leu Phe Thr Leu Val Leu Ala Leu Ile Lys Glu Leu His Gln Val
1 5 10 15

Gln Leu Cys Ser Asp Asn Gly Cys Gln Leu Ala His Tyr Leu Ser Ile
20 25 30

Gln Ile Leu Met Thr Ser Ser Pro Thr His Ile Leu Leu
35 40 45

<210> 6716
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6716
Leu Glu Thr Val Gln Gln Tyr Ile Arg Leu Ile Asn Gly Thr Leu Leu
1 5 10 15

Leu Ala Ile Cys Met Thr Leu Gly Pro Asn Met
20 25

<210> 6717
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6717
Gln Lys Arg Met Thr Leu Lys Lys Gly Phe Ser Leu Ile Cys Val Asp
1 5 10 15

Leu

<210> 6718
<211> 3
<212> PRT
<213> SARS coronavirus

<400> 6718
Ser Lys Asn
1

<210> 6719

SEQLIST-20480.TXT

<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6719
Pro Trp Val Val Leu
1 5

<210> 6720
<211> 25
<212> PRT
<213> SARS coronavirus

<400> 6720
Gln Ser Ile Leu Gly Met Leu Thr Phe Thr Ser Leu Trp Ala Ile Ser
1 5 10 15
His Gly Gly Gln Leu Leu Leu Gln Met
20 25

<210> 6721
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6721
Met His His His Arg Lys His Phe
1 5

<210> 6722
<211> 40
<212> PRT
<213> SARS coronavirus

<400> 6722
Leu Gly Leu Thr Ile Leu Ala Ser Arg Arg Asn Lys Leu Met Ala Ile
1 5 10 15
Pro Cys Met Leu Thr Thr Phe Ser Gly Gly Thr Gln Ile Leu Ser Ser
20 25 30

Cys Leu Pro Ile His Ser Leu Thr
35 40

<210> 6723
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6723
Ala Asn Phe Leu Leu Asn
1 5

<210> 6724
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6724
Glu Glu Leu Leu
1

<210> 6725

SEQLIST-20480.TXT

<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6725
Cys Leu Leu Arg Arg Ile Lys Ser Met Ile
1 5 10

<210> 6726
<211> 67
<212> PRT
<213> SARS coronavirus

<400> 6726
Phe Ile Leu Phe Trp Lys Lys Val Gly Leu Ser Leu Glu Lys Thr Thr
1 5 10 15
Glu Leu Trp Phe Gln Val Ile Phe Leu Leu Thr Thr Lys Arg Thr Cys
20 25 30

Leu Phe Ser Tyr Tyr Phe Leu Leu Ser Leu Val Val Val Thr Leu Thr
35 40 45

Gly Ala Pro Leu Leu Met Met Phe Lys Leu Leu Ile Thr Leu Asn Ile
50 55 60

Leu His Leu
65

<210> 6727
<211> 16
<212> PRT
<213> SARS coronavirus

<400> 6727
Gly Gly Phe Thr Ile Leu Met Lys Phe Leu Asp Gln Thr Leu Phe Ile
1 5 10 15

<210> 6728
<211> 52
<212> PRT
<213> SARS coronavirus

<400> 6728
Leu Arg Ile Tyr Phe Phe His Phe Ile Leu Met Leu Gln Gly Phe Ile
1 5 10 15

Leu Leu Ile Ile Arg Leu Ala Thr Leu Ser Tyr Leu Leu Arg Met Val
20 25 30

Phe Ile Leu Leu Pro Gln Arg Asn Gln Met Leu Ser Val Val Gly Phe
35 40 45

Leu Val Leu Pro
50

<210> 6729
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6729

SEQLIST-20480.TXT

Thr Thr Ser His Ser Arg
1 5

<210> 6730
<211> 36
<212> PRT
<213> SARS coronavirus

<400> 6730
Leu Leu Leu Thr Ile Leu Leu Met Leu Leu Tyr Glu His Val Thr Leu
1 5 10 15

Asn Cys Val Thr Thr Leu Ser Leu Leu Phe Leu Asn Pro Trp Val His
20 25 30

Arg His Ile Leu
35

<210> 6731
<211> 51
<212> PRT
<213> SARS coronavirus

<400> 6731
Tyr Ser Ile Met His Leu Ile Ala Leu Ser Ser Thr Tyr Leu Met Pro
1 5 10 15

Phe Arg Leu Met Phe Gln Lys Ser Gln Val Ile Leu Asn Thr Tyr Glu
20 25 30

Ser Leu Cys Leu Lys Ile Lys Met Gly Phe Ser Met Phe Ile Arg Ala
35 40 45

Ile Asn Leu
50

<210> 6732
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6732
Phe Val Ile Tyr Leu Leu Val Leu Thr Leu
1 5 10

<210> 6733
<211> 40
<212> PRT
<213> SARS coronavirus

<400> 6733
Asn Leu Phe Leu Ser Cys Leu Leu Val Leu Thr Leu Gln Ile Leu Glu
1 5 10 15

Pro Phe Leu Gln Pro Phe His Leu Leu Lys Thr Phe Gly Ala Arg Gln
20 25 30

Leu Gln Pro Ile Leu Leu Ala Ile
35 40

<210> 6734
<211> 56
<212> PRT

<213> SARS coronavirus

<400> 6734

Ser Gln Leu His Leu Cys Ser Ser Met Met Lys Met Val Gln Ser Gln
1 5 10 15
Met Leu Leu Ile Val Leu Lys Ile His Leu Leu Asn Ser Asn Ala Leu
20 25 30
Leu Arg Ala Leu Arg Leu Thr Lys Glu Phe Thr Arg Pro Leu Ile Ser
35 40 45
Gly Leu Phe Pro Gln Glu Met Leu
50 55

<210> 6735

<211> 59

<212> PRT

<213> SARS coronavirus

<400> 6735

Asp Ser Leu Ile Leu Gln Thr Cys Val Leu Leu Glu Arg Phe Leu Met
1 5 10 15
Leu Leu Asn Ser Leu Leu Ser Met His Gly Arg Glu Lys Lys Phe Leu
20 25 30
Ile Val Leu Leu Ile Thr Leu Cys Ser Thr Thr Gln His Phe Phe Gln
35 40 45
Pro Leu Ser Ala Met Ala Phe Leu Pro Leu Ser
50 55

<210> 6736

<211> 13

<212> PRT

<213> SARS coronavirus

<400> 6736

Met Ile Phe Ala Ser Pro Met Ser Met Gln Ile Leu Leu
1 5 10

<210> 6737

<211> 5

<212> PRT

<213> SARS coronavirus

<400> 6737

Ser Arg Glu Met Met
1 5

<210> 6738

<211> 80

<212> PRT

<213> SARS coronavirus

<400> 6738

Arg Gln Asp Lys Leu Val Leu Leu Leu Ile Ile Ile Ile Asn Cys Gln
1 5 10 15
Met Ile Ser Trp Val Val Ser Leu Leu Gly Ile Leu Gly Thr Leu Met
20 25 30

SEQLIST-20480.TXT

Leu Leu Gln Leu Val Ile Ile Ile Ile Asn Ile Gly Ile Leu Asp Met
35 40 45

Ala Ser Leu Gly Pro Leu Arg Glu Thr Tyr Leu Met Cys Leu Ser Pro
50 55 60

Leu Met Ala Asn Leu Ala Pro His Leu Leu Leu Ile Val Ile Gly His
65 70 75 80

<210> 6739
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 6739
Met Ile Met Val Phe Thr Pro Leu Leu Ala Leu Ala Thr Asn Leu Thr
1 5 10 15

Glu Leu

<210> 6740
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6740
Tyr Phe Leu Leu Asn Phe
1 5

<210> 6741
<211> 33
<212> PRT
<213> SARS coronavirus

<400> 6741
Met His Arg Pro Arg Phe Val Asp Gln Asn Tyr Pro Leu Thr Leu Leu
1 5 10 15

Arg Thr Ser Val Ser Ile Leu Ile Leu Met Asp Ser Leu Val Leu Val
20 25 30

Cys

<210> 6742
<211> 32
<212> PRT
<213> SARS coronavirus

<400> 6742
Leu Leu Leu Gln Arg Asp Phe Asn His Phe Asn Asn Leu Ala Val Met
1 5 10 15

Phe Leu Ile Ser Leu Ile Pro Phe Glu Ile Leu Lys His Leu Lys Tyr
20 25 30

<210> 6743
<211> 9
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6743
Thr Phe His Leu Ala Leu Leu Gly Val
1 5

<210> 6744
<211> 53
<212> PRT
<213> SARS coronavirus

<400> 6744
Leu His Leu Glu Gln Met Leu His Leu Lys Leu Leu Phe Tyr Ile Lys
1 5 10 15
Met Leu Thr Ala Leu Met Phe Leu Gln Gln Phe Met Gln Ile Asn Ser
20 25 30
His Gln Leu Gly Ala Tyr Ile Leu Leu Glu Thr Met Tyr Ser Arg Leu
35 40 45
Lys Gln Ala Val Leu
50

<210> 6745
<211> 43
<212> PRT
<213> SARS coronavirus

<400> 6745
Glu Leu Ser Met Ser Thr Leu Leu Met Ser Ala Thr Phe Leu Leu Glu
1 5 10 15
Leu Ala Phe Val Leu Val Thr Ile Gln Phe Leu Tyr Tyr Val Val Leu
20 25 30
Ala Lys Asn Leu Leu Trp Leu Ile Leu Cys Leu
35 40

<210> 6746
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 6746
Val Leu Ile Val Gln Leu Leu Thr Leu Ile Thr Pro Leu Leu Tyr Leu
1 5 10 15
Leu Thr Phe Gln Leu Ala Leu Leu Gln Lys
20 25

<210> 6747
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6747
Cys Leu Phe Leu Trp Leu Lys Pro Pro
1 5

<210> 6748
<211> 26
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6748
Ile Val Ile Cys Thr Ser Ala Glu Ile Leu Leu Asn Val Leu Ile Cys
1 5 10 15

Phe Ser Asn Met Val Ala Phe Ala His Asn
20 25

<210> 6749
<211> 30
<212> PRT
<213> SARS coronavirus

<400> 6749
Ile Val His Ser Gln Val Leu Leu Leu Asn Arg Ile Ala Thr His Val
1 5 10 15

Lys Cys Ser Leu Lys Ser Asn Lys Cys Thr Lys Pro Gln Leu
20 25 30

<210> 6750
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6750
Asn Ile Leu Val Val Leu Ile Phe His Lys Tyr Tyr Leu Thr Leu
1 5 10 15

<210> 6751
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6751
Ser Gln Leu Arg Gly Leu Leu Leu Arg Thr Cys Ser Leu Ile Arg
1 5 10 15

<210> 6752
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6752
His Ser Leu Met Leu Ala Ser
1 5

<210> 6753
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6753
Ser Asn Met Ala Asn Ala
1 5

<210> 6754
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6754
Val Ile Leu Met Leu Glu Ile Ser Phe Val Arg Arg Ser Ser Met Asp

1 5 10 15

Leu Gln Cys Cys His Leu Cys Ser Leu Met Ile
20 25

<210> 6755
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6755
Leu Leu Pro Thr Leu Leu Leu
1 5

<210> 6756
<211> 81
<212> PRT
<213> SARS coronavirus

<400> 6756
Leu Val Val Leu Pro Leu Leu Asp Gly His Leu Val Leu Ala Leu Leu
1 5 10 15

Phe Lys Tyr Leu Leu Cys Lys Trp His Ile Gly Ser Met Ala Leu
20 25 30

Glu Leu Pro Lys Met Phe Ser Met Arg Thr Lys Asn Lys Ser Pro Thr
35 40 45

Asn Leu Thr Arg Arg Leu Val Lys Phe Lys Asn His Leu Gln Gln His
50 55 60

Gln Leu His Trp Ala Ser Cys Lys Thr Leu Leu Thr Arg Met Leu Lys
65 70 75 80

His

<210> 6757
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6757
Thr His Leu Leu Asn Asn Leu Ala Leu Ile Leu Val Gln Phe Gln Val
1 5 10 15

Cys

<210> 6758
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 6758
Met Ile Ser Phe Arg Asp Leu Ile Lys Ser Arg Arg Arg Tyr Lys Leu
1 5 10 15

Thr Gly

<210> 6759

SEQLIST-20480.TXT

<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6759
Leu Gln Ala Asp Phe Lys Ala Phe Lys Pro Met
1 5 10

<210> 6760
<211> 101
<212> PRT
<213> SARS coronavirus

<400> 6760
Ser Gly Leu Leu Lys Ser Gly Leu Leu Leu Ile Leu Leu Leu Lys
1 5 10 15
Cys Leu Ser Val Phe Leu Asp Asn Gln Lys Glu Leu Thr Phe Val Glu
20 25 30
Arg Ala Thr Thr Leu Cys Pro Ser His Lys Gln Pro Arg Met Val Leu
35 40 45
Ser Ser Tyr Met Ser Arg Met Cys His Pro Arg Arg Gly Thr Ser Pro
50 55 60
Gln Arg Gln Gln Phe Val Met Lys Ala Lys His Thr Ser Leu Val Lys
65 70 75 80
Val Phe Leu Cys Leu Met Ala Leu Leu Gly Leu Leu His Arg Gly Thr
85 90 95
Ser Phe Leu His Lys
100

<210> 6761
<211> 78
<212> PRT
<213> SARS coronavirus

<400> 6761
Leu Leu Gln Thr Ile His Leu Ser Gln Glu Ile Val Met Ser Leu Leu
1 5 10 15
Ala Ser Leu Thr Thr Gln Phe Met Ile Leu Cys Asn Leu Ser Leu Thr
20 25 30
His Ser Lys Lys Ser Trp Thr Ser Thr Ser Lys Ile Ile His His Gln
35 40 45
Met Leu Ile Leu Ala Thr Phe Gln Ala Leu Thr Leu Leu Ser Ser Thr
50 55 60
Phe Lys Lys Lys Leu Thr Ala Ser Met Arg Ser Leu Lys Ile
65 70 75

<210> 6762
<211> 30
<212> PRT
<213> SARS coronavirus

<400> 6762
Met Asn His Ser Leu Thr Phe Lys Asn Trp Glu Asn Met Ser Asn Ile

1 5 10 15

Leu Asn Gly Leu Gly Met Phe Gly Ser Ala Ser Leu Leu Asp
20 25 30

<210> 6763
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 6763
Leu Pro Ser Ser Trp Leu Gln Ser Cys Phe Val Ala
1 5 10

<210> 6764
<211> 59
<212> PRT
<213> SARS coronavirus

<400> 6764
Leu Val Val Ala Val Ala Ser Arg Val His Ala Leu Val Val Leu Ala
1 5 10 15

Ala Ser Leu Met Arg Met Thr Leu Ser Gln Phe Ser Arg Val Ser Asn
20 25 30

Tyr Ile Thr His Lys Arg Thr Tyr Gly Phe Val Tyr Glu Ile Phe Tyr
35 40 45

Ser Trp Ile Asn Tyr Cys Thr Ala Ser Lys Asn
50 55

<210> 6765
<211> 45
<212> PRT
<213> SARS coronavirus

<400> 6765
Gln Cys Phe Ser Cys Lys Tyr Cys Ser Cys Tyr Ser Asn Asp Thr Ala
1 5 10 15

Thr Ser Leu Thr Pro Phe Arg Met Ala Cys Tyr Trp Arg Cys Ile Ser
20 25 30

Cys Cys Phe Ser Glu Arg Tyr Gln Asn Asn Cys Ala Gln
35 40 45

<210> 6766
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6766
Lys Met Ala Ala Ser Pro Leu
1 5

<210> 6767
<211> 46
<212> PRT
<213> SARS coronavirus

<400> 6767
Gly Leu Pro Val His Leu Gln Phe Thr Ala Ala Ile Cys Tyr His Leu

1 5 10 15
Phe Thr Ser Phe Ala Cys Arg Cys Arg Tyr Gly Gly Ala Ile Phe Val
 20 25 30

Pro Leu Cys Leu Asp Ile Phe Ser Thr Met His Gln Arg Met
 35 40 45

<210> 6768
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6768
Asn Tyr Tyr Glu Met Leu Ala Leu Leu Glu Val Gln Ile Gln Glu Pro
1 5 10 15

Ile Thr Leu

<210> 6769
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6769
Cys Gln Leu Leu Cys Leu Leu Ala His Thr
1 5 10

<210> 6770
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6770
Leu Leu Tyr Thr Ile
1 5

<210> 6771
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6771
Gln Cys His Arg Tyr Asn Cys Arg Tyr
1 5

<210> 6772
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6772
Arg His Phe Asn Thr Lys Thr Gln Arg Arg Leu Pro Asn Trp Trp Leu
1 5 10 15

Phe

<210> 6773
<211> 4
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6773
Ala Leu Arg Cys
1

<210> 6774
<211> 16
<212> PRT
<213> SARS coronavirus

<400> 6774
Arg Leu Cys Arg Cys Thr Trp Leu Phe His Arg Ser Leu Leu Pro Ala
1 5 10 15

<210> 6775
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6775
Val Tyr Thr Asn Tyr Tyr Arg His Trp Tyr
1 5 10

<210> 6776
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6776
Lys Cys Tyr Ile Leu His Leu
1 5

<210> 6777
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6777
Arg Pro Thr Glu Cys Ala Asn Thr His Asn Arg Arg Leu Phe Arg Ser
1 5 10 15

Cys

<210> 6778
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6778
Ser Ser Asn Gly Ser Asn Leu
1 5

<210> 6779
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6779
Ala Asp Asp Asp Tyr
1 5

SEQLIST-20480.TXT

<210> 6780
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6780
 Arg Ala Phe Val Ser Thr Arg Lys
 1 5

<210> 6781
 <211> 17
 <212> PRT
 <213> SARS coronavirus

<400> 6781
 Val Arg Thr Tyr Val Leu Ile Arg Phe Gly Arg Asn Arg Tyr Val Asn
 1 5 10 15

Ser

<210> 6782
 <211> 31
 <212> PRT
 <213> SARS coronavirus

<400> 6782
 Arg Thr Ser Phe Ser Cys Phe Arg Gly Ile Leu Ala Ser His Thr Ser
 1 5 10 15

His Pro Tyr Cys Ala Ser Ile Val Cys Val Leu Leu Gln Tyr Cys
 20 25 30

<210> 6783
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 6783
 Arg Glu Phe Ser Lys Thr Asn Gly Leu Arg Leu Leu Ala Cys
 1 5 10

<210> 6784
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6784
 Lys Ser Glu Leu Phe
 1 5

<210> 6785
 <211> 242
 <212> PRT
 <213> SARS coronavirus

<400> 6785
 Ser Ser Gly Leu Asn Glu Leu Thr Ile Ile Ile Ile Leu Phe Gly Thr
 1 5 10 15

Leu Thr Leu Leu Ile Met Ala Asp Asn Gly Thr Ile Thr Val Glu Glu
 20 25 30

SEQLIST-20480.TXT

Leu Lys Gln Leu Leu Glu Gln Trp Asn Leu Val Ile Gly Phe Leu Phe
35 40 45
Leu Ala Trp Ile Met Leu Leu Gln Phe Ala Tyr Ser Asn Arg Asn Arg
50 55 60
Phe Leu Tyr Ile Ile Lys Leu Val Phe Leu Trp Leu Leu Trp Pro Val
65 70 75 80
Thr Leu Ala Cys Phe Val Leu Ala Ala Val Tyr Arg Ile Asn Trp Val
85 90 95
Thr Gly Gly Ile Ala Ile Ala Met Ala Cys Ile Val Gly Leu Met Trp
100 105 110
Leu Ser Tyr Phe Val Ala Ser Phe Arg Leu Phe Ala Arg Thr Arg Ser
115 120 125
Met Trp Ser Phe Asn Pro Glu Thr Asn Ile Leu Leu Asn Val Pro Leu
130 135 140
Arg Gly Thr Ile Val Thr Arg Pro Leu Met Glu Ser Glu Leu Val Ile
145 150 155 160
Gly Ala Val Ile Ile Arg Gly His Leu Arg Met Ala Gly His Ser Leu
165 170 175
Gly Arg Cys Asp Ile Lys Asp Leu Pro Lys Glu Ile Thr Val Ala Thr
180 185 190
Ser Arg Thr Leu Ser Tyr Tyr Lys Leu Gly Ala Ser Gln Arg Val Gly
195 200 205
Thr Asp Ser Gly Phe Ala Ala Tyr Asn Arg Tyr Arg Ile Gly Asn Tyr
210 215 220
Lys Leu Asn Thr Asp His Ala Gly Ser Asn Asp Asn Ile Ala Leu Leu
225 230 235 240
val Gln

<210> 6786
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6786
Val Thr Thr Asp Val Ser Ser Cys
1 5

<210> 6787
<211> 23
<212> PRT
<213> SARS coronavirus

<400> 6787
Leu Pro Gly Tyr Asn Ser Arg Asp Ile Asp Tyr His Tyr Glu Asp Phe
1 5 10 15

Gln Asp Cys Tyr Leu Glu Ser
20

SEQLIST-20480.TXT

<210> 6788
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 6788
 Arg Tyr Asn Lys Phe Asn Ser Glu Thr Ile Ile
 1 5 10

<210> 6789
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6789
 Glu Glu Leu Phe Gly Val Arg
 1 5

<210> 6790
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6790
 Arg Thr Tyr Gly Val Arg Leu Ser Ile Lys Arg Thr
 1 5 10

<210> 6791
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6791
 Lys Leu Phe Ser Ser
 1 5

<210> 6792
 <211> 21
 <212> PRT
 <213> SARS coronavirus

<400> 6792
 Leu Tyr Leu His Leu Ala Ser Tyr Ile Thr Ile Arg Ser Val Leu Glu
 1 5 10 15

Val Arg Leu Tyr Tyr
 20

<210> 6793
 <211> 24
 <212> PRT
 <213> SARS coronavirus

<400> 6793
 Lys Asn Leu Ala His Gln Glu His Thr Arg Ala Ile His His Phe Thr
 1 5 10 15

Leu Leu Leu Thr Ile Asn Leu His
 20

<210> 6794
 <211> 51
 <212> PRT

<213> SARS coronavirus

<400> 6794

Leu Ala Leu Ala His Thr Leu Leu Leu Leu Val Leu Thr Val Leu Asp
1 5 10 15

Ile Pro Ile Ser Cys Val Gln Asp Gln Phe His Gln Asn Phe Ser Ser
20 25 30

Asp Lys Arg Arg Phe Asn Lys Ser Ser Thr Arg His Phe Phe Ser Leu
35 40 45

Leu Leu Leu
50

<210> 6795

<211> 12

<212> PRT

<213> SARS coronavirus

<400> 6795

Tyr Phe Ala Ser Pro Leu Arg Glu Arg Gln Asn Glu
1 5 10

<210> 6796

<211> 4

<212> PRT

<213> SARS coronavirus

<400> 6796

Ala His Phe Asn
1

<210> 6797

<211> 64

<212> PRT

<213> SARS coronavirus

<400> 6797

Leu Leu Phe Val Leu Phe Ser Leu Ser Ala Ile Pro Cys Phe Asn Asn
1 5 10 15

Ala Tyr Tyr Ile Leu Val Phe Thr Arg Asn Pro Gly Ser Arg Arg Thr
20 25 30

Leu Tyr Gln Ser Leu Asn Glu His Glu Thr Ser His Cys Phe Asp Leu
35 40 45

Tyr Phe Ser Met Gln Leu His Met His Cys Ser Thr Ala Leu Cys Ile
50 55 60

<210> 6798

<211> 4

<212> PRT

<213> SARS coronavirus

<400> 6798

Thr Ser Cys Ala
1

<210> 6799

<211> 16

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6799
Gly Thr Thr Leu Gly Val Ile Leu Ile Ala Leu Leu Gly Phe Val Leu
1 5 10 15

<210> 6800
<211> 32
<212> PRT
<213> SARS coronavirus

<400> 6800
Glu Arg Phe Tyr Leu Phe Ile Asp Gly Thr Leu Trp Phe Lys His Ala
1 5 10 15
His Leu Met Leu Leu Ser Thr Val Lys Ile Gln Leu Val Val Arg Leu
20 25 30

<210> 6801
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 6801
Leu Gly Val Gly Thr Phe Met Lys Val Thr Lys Leu Leu His Leu Glu
1 5 10 15
Thr Tyr Leu Leu Phe
20

<210> 6802
<211> 428
<212> PRT
<213> SARS coronavirus

<400> 6802
Ile Asn Glu Gln Ile Lys Met Ser Asp Asn Gly Pro Gln Ser Asn Gln
1 5 10 15
Arg Ser Ala Pro Arg Ile Thr Phe Gly Gly Pro Thr Asp Ser Thr Asp
20 25 30
Asn Asn Gln Asn Gly Gly Arg Asn Gly Ala Arg Pro Lys Gln Arg Arg
35 40 45
Pro Gln Gly Leu Pro Asn Asn Thr Ala Ser Trp Phe Thr Ala Leu Thr
50 55 60
Gln His Gly Lys Glu Glu Leu Arg Phe Pro Arg Gly Gln Gly Val Pro
65 70 75 80
Ile Asn Thr Asn Ser Gly Pro Asp Asp Gln Ile Gly Tyr Tyr Arg Arg
85 90 95
Ala Thr Arg Arg Val Arg Gly Gly Asp Gly Lys Met Lys Glu Leu Ser
100 105 110
Pro Arg Trp Tyr Phe Tyr Tyr Leu Gly Thr Gly Pro Glu Ala Ser Leu
115 120 125

SEQLIST-20480.TXT

Pro Tyr Gly Ala Asn Lys Glu Gly Ile Val Trp Val Ala Thr Glu Gly
130 135 140
Ala Leu Asn Thr Pro Lys Asp His Ile Gly Thr Arg Asn Pro Asn Asn
145 150 155 160
Asn Ala Ala Thr Val Leu Gln Leu Pro Gln Gly Thr Thr Leu Pro Lys
165 170 175
Gly Phe Tyr Ala Glu Gly Ser Arg Gly Gly Ser Gln Ala Ser Ser Arg
180 185 190
Ser Ser Ser Arg Ser Arg Gly Asn Ser Arg Asn Ser Thr Pro Gly Ser
195 200 205
Ser Arg Gly Asn Ser Pro Ala Arg Met Ala Ser Gly Gly Gly Glu Thr
210 215 220
Ala Leu Ala Leu Leu Leu Leu Asp Arg Leu Asn Gln Leu Glu Ser Lys
225 230 235 240
Val Ser Gly Lys Gly Gln Gln Gln Gln Gly Gln Thr Val Thr Lys Lys
245 250 255
Ser Ala Ala Glu Ala Ser Lys Lys Pro Arg Gln Lys Arg Thr Ala Thr
260 265 270
Lys Gln Tyr Asn Val Thr Gln Ala Phe Gly Arg Arg Gly Pro Glu Gln
275 280 285
Thr Gln Gly Asn Phe Gly Asp Gln Asp Leu Ile Arg Gln Gly Thr Asp
290 295 300
Tyr Lys His Trp Pro Gln Ile Ala Gln Phe Ala Pro Ser Ala Ser Ala
305 310 315 320
Phe Phe Gly Met Ser Arg Ile Gly Met Glu Val Thr Pro Ser Gly Thr
325 330 335
Trp Leu Thr Tyr His Gly Ala Ile Lys Leu Asp Asp Lys Asp Pro Gln
340 345 350
Phe Lys Asp Asn Val Ile Leu Leu Asn Lys His Ile Asp Ala Tyr Lys
355 360 365
Thr Phe Pro Pro Thr Glu Pro Lys Lys Asp Lys Lys Lys Lys Thr Asp
370 375 380
Glu Ala Gln Pro Leu Pro Gln Arg Gln Lys Lys Gln Pro Thr Val Thr
385 390 395 400
Leu Leu Pro Ala Ala Asp Met Asp Asp Phe Ser Arg Gln Leu Gln Asn
405 410 415
Ser Met Ser Gly Ala Ser Ala Asp Ser Thr Gln Ala
420 425

<210> 6803
<211> 12
<212> PRT
<213> SARS coronavirus
<400> 6803

Thr Leu Met Met Thr Thr Gln Gly Arg Trp Ala Met
1 5 10

<210> 6804
<211> 16
<212> PRT
<213> SARS coronavirus

<400> 6804
Thr Phe Ser Gln Phe Arg Leu Arg Tyr Ile Val Tyr Ser Cys Ala Glu
1 5 10 15

<210> 6805
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6805
Ile Leu Val Thr Lys Gln His Lys
1 5

<210> 6806
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6806
Leu Thr Leu Ile Ser His Ser Asn Leu
1 5

<210> 6807
<211> 28
<212> PRT
<213> SARS coronavirus

<400> 6807
Ser Met Cys Asn Ile Arg Glu Asp Leu Lys Glu Pro Pro His Phe His
1 5 10 15

Arg Gly His Ala Glu Tyr Asp Arg Gly Tyr Ser Glu
20 25

<210> 6808
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6808
Gly Glu Leu Pro Ile Trp Lys Ser Pro Asn Val
1 5 10

<210> 6809
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6809
Cys Tyr Pro His Val Ile Leu Ile Ala Ser
1 5 10

<210> 6810
<211> 11

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6810
Thr Gln Glu Lys Pro Thr Asn Leu Asp Leu Leu
1 5 10

<210> 6811
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6811
Ile Cys Ser Leu Asn Glu Leu
1 5

<210> 6812
<211> 25
<212> PRT
<213> SARS coronavirus

<400> 6812
Asn Leu Cys Ser Cys Arg Ser Ala Ala Cys Leu Val His Leu Arg Ser
1 5 10 15

Ile Asn Asn Asn Lys Phe Tyr Cys Arg
20 25

<210> 6813
<211> 35
<212> PRT
<213> SARS coronavirus

<400> 6813
Gln Glu Thr Ser Asn Ser Ser Leu Phe Cys Arg Leu Leu Thr Val Ser
1 5 10 15

Ser Val Leu Gln Ser Ile Ile Ser Ile Pro Arg Phe Arg Pro Gly Val
20 25 30

Thr Glu Arg
35

<210> 6814
<211> 23
<212> PRT
<213> SARS coronavirus

<400> 6814
Asp Gly Glu Pro Cys Ser Trp Cys Gln Arg Glu Asn Thr Arg Pro Thr
1 5 10 15

Gln Phe Ala Cys Pro Ser Gly
20

<210> 6815
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 6815
Arg Arg Ala Ser Ala Trp Leu Arg Gly Leu Cys Gly Arg Gly Pro Ile
1 5 10 15

Gly Gly Thr

<210> 6816
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 6816
 Thr Pro Gln Lys Trp His Leu Trp Ser Ser Arg Ala Gly Lys Arg Arg
 1 5 10 15

Thr Ala Pro Ala
 20

<210> 6817
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6817
 Thr Ala Leu Cys Val His
 1 5

<210> 6818
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 6818
 Cys Leu Lys His Gln Ser Arg Pro Gln Gly Arg
 1 5 10

<210> 6819
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6819
 Ala Gly Cys Arg Asn Gly Arg His Ser Val Arg Ser
 1 5 10

<210> 6820
 <211> 24
 <212> PRT
 <213> SARS coronavirus

<400> 6820
 Arg Tyr Asn Thr Gly Ser Thr Arg Ala Thr Cys Gly Arg Asn Pro Asn
 1 5 10 15

Cys Ile Pro Gln Cys Ser Ser Ser
 20

<210> 6821
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6821
 Gly Ser Arg Trp Ser
 1 5

SEQLIST-20480.TXT

<210> 6822
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6822
 Leu Trp His Arg Ser Lys Val Leu
 1 5

<210> 6823
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6823
 Arg Ala Trp His
 1

<210> 6824
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6824
 Thr Lys Leu Glu His
 1 5

<210> 6825
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6825
 Ala Trp Gln Trp Cys Thr Pro
 1 5

<210> 6826
 <211> 22
 <212> PRT
 <213> SARS coronavirus

<400> 6826
 Ala Gln Trp Arg Cys Ser His Ser Leu Cys Arg Gln Gln Phe Leu Trp
 1 5 10 15
 Pro Arg Trp Val Pro Ser
 20

<210> 6827
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 6827
 Leu His Gln Arg Phe Ser Arg Thr Arg Gly Gln Val Asn Val His Ser
 1 5 10 15
 Phe Arg Thr Thr
 20

<210> 6828
 <211> 12

SEQLIST-20480.TXT

```

<212>  PRT
<213>  SARS coronavirus

<400>  6828
Leu His Arg Val Glu Glu Arg Cys Leu Leu Leu Pro
1      5      10

<210>  6829
<211>  5
<212>  PRT
<213>  SARS coronavirus

<400>  6829
Asn Cys Leu Val His
1      5

<210>  6830
<211>  10
<212>  PRT
<213>  SARS coronavirus

<400>  6830
Glu Leu Arg Ala Pro Asp Thr Leu Arg Asn
1      5      10

<210>  6831
<211>  5
<212>  PRT
<213>  SARS coronavirus

<400>  6831
Glu Cys Gln Glu Ile
1      5

<210>  6832
<211>  13
<212>  PRT
<213>  SARS coronavirus

<400>  6832
His Phe Gln Arg Gly Met Pro Lys Val Cys Val Ser Ser
1      5      10

<210>  6833
<211>  10
<212>  PRT
<213>  SARS coronavirus

<400>  6833
Leu Lys Ser Gln Ser His Ser Thr Thr Cys
1      5      10

<210>  6834
<211>  4
<212>  PRT
<213>  SARS coronavirus

<400>  6834
Lys Glu Lys Asp
1

<210>  6835
<211>  18

```

SEQLIST-20480.TXT

```

<212>    PRT
<213>    SARS coronavirus

<400>    6835
Gly Phe His Gly Ala Tyr Thr Leu Cys Val Pro Cys Cys Ile Ser Thr
1          5          10          15

Gly val

<210>    6836
<211>    10
<212>    PRT
<213>    SARS coronavirus

<400>    6836
Gln Tyr Ala Leu Val Tyr Leu Asp Glu Met
1          5          10

<210>    6837
<211>    13
<212>    PRT
<213>    SARS coronavirus

<400>    6837
Ser Phe Met Ala Asp Val Arg Leu Ser Glu Ser His Leu
1          5          10

<210>    6838
<211>    4
<212>    PRT
<213>    SARS coronavirus

<400>    6838
Thr Leu Trp His
1

<210>    6839
<211>    4
<212>    PRT
<213>    SARS coronavirus

<400>    6839
Lys Phe Ser Tyr
1

<210>    6840
<211>    10
<212>    PRT
<213>    SARS coronavirus

<400>    6840
Arg Thr Tyr Tyr Met Trp Val Pro Thr Tyr
1          5          10

<210>    6841
<211>    17
<212>    PRT
<213>    SARS coronavirus

<400>    6841
Cys Cys Ser Glu Asn Ala Met Ser Cys Leu Ser Arg Pro Arg Asp Trp
1          5          10          15

```

Thr

<210> 6842
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 6842
 Cys Cys Arg Leu Ser Gln Pro Leu Lys His
 1 5 10

<210> 6843
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6843
 Asn Ser Thr Pro Gln Gly Arg
 1 5

<210> 6844
 <211> 13
 <212> PRT
 <213> SARS coronavirus

<400> 6844
 Met Phe Trp Arg Leu Cys Val Cys Leu Cys Trp Leu Leu
 1 5 10

<210> 6845
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6845
 Ala Cys Leu Leu Gly Ser Ser Cys
 1 5

<210> 6846
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 6846
 Tyr Trp Leu Arg Pro Tyr Trp His Tyr Trp
 1 5 10

<210> 6847
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6847
 Gln Cys Gly Asp Leu Glu
 1 5

<210> 6848
 <211> 4
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6848
Asp Thr Glu Ser
1

<210> 6849
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6849
His Cys Trp Arg Phe Ser Phe Glu
1 5

<210> 6850
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6850
Arg Gly Cys His His Phe Gly Ile Phe Leu Cys Phe Tyr Lys Cys Leu
1 5 10 15

Tyr

<210> 6851
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6851
His Tyr Lys Glu Ser
1 5

<210> 6852
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6852
Leu Gln Val Phe Gln Asn His Cys
1 5

<210> 6853
<211> 42
<212> PRT
<213> SARS coronavirus

<400> 6853
Ser Tyr Gln Gly Lys Ala Arg Lys Arg Cys Leu Glu His Trp Thr Thr
1 5 10 15

Glu Ile Ser Phe Asn Thr Thr Val Trp Phe Ser Leu Thr Gly Cys Trp
20 25 30

Cys Tyr Gln Ile Asn Phe Cys Ala His Thr
35 40

<210> 6854
<211> 7
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6854
Cys Ser Lys Pro Leu Asn Ser
1 5

<210> 6855
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6855
Phe Ala Lys Ser Ser Cys His His Thr
1 5

<210> 6856
<211> 39
<212> PRT
<213> SARS coronavirus

<400> 6856
Thr Val Ile Thr Ser Cys Arg Arg His Gly Leu Tyr Phe Arg Pro Ala
1 5 10 15

His Gln Gln Cys His Tyr Tyr Gly Ile Cys Asn Trp Trp Ser Cys Thr
20 25 30

Thr Asp Phe Ser Val Val Val
35

<210> 6857
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6857
Ser Phe Gly His Tyr Cys
1 5

<210> 6858
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6858
Lys Thr Gln Ala Tyr Leu
1 5

<210> 6859
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6859
Ile Ser Gln Gly Cys Leu Gly Asp Ser Gln Ile Ser His Tyr Arg Cys
1 5 10 15

Phe

<210> 6860
<211> 11
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6860
His Arg Gln Gly Ser Asn Thr Gly Cys Phe Arg
1 5 10

<210> 6861
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6861
His Gln Gly Leu Cys Lys Met Leu His
1 5

<210> 6862
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6862
Gln Gly Thr Arg Asn Val His
1 5

<210> 6863
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6863
Ser Ser His Tyr Arg Trp Arg Lys Val Ala Ile Thr Gln Leu Arg
1 5 10 15

<210> 6864
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 6864
Ser Leu His Arg Ser Lys Gln Gly Thr Leu Pro Ser Val Tyr Thr Trp
1 5 10 15

Gln Gly Ala Ala Ala Thr Thr His Ala Ser
20 25

<210> 6865
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6865
Gly Thr Lys Arg Ser Asn Leu Ser
1 5

<210> 6866
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6866
His Ser Thr Tyr Leu
1 5

<210> 6867
<211> 7

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6867
Gly Gly Cys Ser Gln Glu Arg
1 5

<210> 6868
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6868
Thr Arg Ser Thr Arg Asp Ala Arg
1 5

<210> 6869
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 6869
Leu His Lys Trp Ser Tyr Arg Arg His Thr Ser Leu Cys Lys Trp Pro
1 5 10 15

His Ala Leu Arg Asp
20

<210> 6870
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6870
Gly Gln Arg Thr Ile Leu Arg Ile Val Ser Trp Phe Thr Gly Tyr Lys
1 5 10 15

Gln Cys Leu Ser Leu Lys Arg Gly Cys Thr Asn
20 25

<210> 6871
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 6871
Arg Cys Asn Leu Trp Arg Arg Tyr Cys Leu Gly Ser Ser Arg Leu Gln
1 5 10 15

Glu Cys Glu Asn His Ile
20

<210> 6872
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6872
Lys Val Leu Cys Leu His Cys
1 5

<210> 6873
<211> 6

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 6873
Ile Arg Tyr Arg Ser Tyr
1 5

<210> 6874
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6874
Val Cys Met Cys Cys Ser Arg Gly Cys Cys Glu Asp Phe Thr Thr Ser
1 5 10 15

Phe

<210> 6875
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6875
Ser Pro Tyr Gln His Gly Tyr
1 5

<210> 6876
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6876
Val Glu Cys Ser Tyr Ile Leu Leu Ile
1 5

<210> 6877
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6877
Arg Lys Leu Phe Ile Thr Tyr Val Leu Phe Leu Leu Pro Ser Arg
1 5 10 15

<210> 6878
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6878
Gly Arg Arg Gly Arg Cys Arg Val
1 5

<210> 6879
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6879
Gly Arg Arg Asn
1

SEQLIST-20480.TXT

<210> 6880
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6880
 Val Arg Tyr Arg Gly
 1 5

<210> 6881
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6881
 Leu Ser Arg Ser Pro Ser Gly Ile Trp Cys Leu Ser
 1 5 10

<210> 6882
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6882
 Asn Ser Ser Ser
 1

<210> 6883
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 6883
 Gly Arg Arg Arg Gly Arg Leu Ala Gly
 1 5

<210> 6884
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6884
 Ala Ile Arg Asp
 1

<210> 6885
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6885
 Ala Arg Thr Arg Thr Tyr Thr
 1 5

<210> 6886
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 6886
 Ser Val Tyr Trp Leu Phe Lys Thr Tyr
 1 5

SEQLIST-20480.TXT

<210> 6887
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6887
 Gln Cys Cys His
 1

<210> 6888
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6888
 Gly Gly Thr Lys Cys
 1 5

<210> 6889
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6889
 Ser Tyr Gly Asp Cys Lys Cys Cys
 1 5

<210> 6890
 <211> 25
 <212> PRT
 <213> SARS coronavirus

<400> 6890
 His Thr Pro Glu Thr Trp Trp Trp Cys Ser Arg Cys Thr Gln Gln Gly
 1 5 10 15

Asn Gln Trp Cys His Ala Lys Gly Glu
 20 25

<210> 6891
 <211> 16
 <212> PRT
 <213> SARS coronavirus

<400> 6891
 Ala Lys Trp Pro Ser Tyr Ser Arg Arg Val Leu Phe Ala Phe Trp Thr
 1 5 10 15

<210> 6892
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6892
 Glu Val Ser Ala Cys Cys Trp Thr
 1 5

<210> 6893
 <211> 4
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 6893
Pro Lys Cys Arg
1

<210> 6894
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6894
Gly His Pro Ala Ser
1 5

<210> 6895
<211> 20
<212> PRT
<213> SARS coronavirus

<400> 6895
Lys Phe Gln Phe Thr Gly His Leu Thr Cys Thr Ile Val Val Ser Arg
1 5 10 15

His Ile Trp Cys
20

<210> 6896
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 6896
Thr Thr Ser Val Phe Thr Ser Val Arg Ala Asp Gly Ser Tyr Thr Gly
1 5 10 15

Leu Tyr Cys Ser Gln
20

<210> 6897
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6897
Gln Ser Ser Leu
1

<210> 6898
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6898
Ala Gly Cys His Gly Leu Ser
1 5

<210> 6899
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6899
Ser Gly Ser Thr

1

<210> 6900
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 6900
 Thr Arg Gly Ala Thr Lys His Arg Arg Phe Gln Asn
 1 5 10

<210> 6901
 <211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 6901
 Gly Glu Ile Cys Arg Thr Glu Ala Cys Arg Cys Glu Ala Lys Asn
 1 5 10 15

<210> 6902
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6902
 Gly Tyr His Asn Thr Gly Arg Asn
 1 5

<210> 6903
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6903
 Val Ser Tyr Gln
 1

<210> 6904
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6904
 Val Thr Leu Val Cys
 1 5

<210> 6905
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6905
 Phe Ser Glu His Ala
 1 5

<210> 6906
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6906
 Arg Tyr Val Phe Pro

```

1              5
<210> 6907
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6907
Glu Gly Cys Thr Leu His Gly Arg
1              5

<210> 6908
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6908
Tyr His Leu Cys Cys Asn Thr Leu Gln Lys Gly Trp Trp His Tyr
1              5              10              15

<210> 6909
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6909
Asp Ala Leu Lys Ser Phe Glu Glu Ser Ala Ser
1              5              10

<210> 6910
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6910
Val Tyr Asn His Val Pro Trp Thr Arg Met Cys Trp Leu Tyr Thr
1              5              10              15

<210> 6911
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 6911
Glu Met Gln Ile Cys Ile Leu Cys Thr Thr Phe Arg Ser Thr
1              5              10

<210> 6912
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 6912
Gly Arg Asp Ser Arg Asn Cys Ile Leu Glu Phe Glu Arg Asn Ala Cys
1              5              10              15

Ser Cys

<210> 6913
<211> 12
<212> PRT
<213> SARS coronavirus

```

SEQLIST-20480.TXT

```

<400> 6913
Arg Asp Lys Lys Ile Asn Ala Tyr Met His Gly Cys
1          5          10

<210> 6914
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6914
Ser His Asn Gly Asn His Pro Thr
1          5

<210> 6915
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6915
Asn Ser Arg Gly His Arg
1          5

<210> 6916
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6916
Leu Trp Cys Pro Ile Leu Leu Leu Tyr
1          5

<210> 6917
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 6917
Arg Ala Cys Ser Phe Tyr Tyr Tyr Glu Ala Glu Leu Ser Lys
1          5          10

<210> 6918
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 6918
Ala Ala Cys His Asn Ala Asn Trp Leu Cys Asp Thr Trp Phe
1          5          10

<210> 6919
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6919
Arg Gly Cys Ala Leu Tyr Ala Phe Ser
1          5

<210> 6920
<211> 16
<212> PRT
<213> SARS coronavirus

```

SEQLIST-20480.TXT

<400> 6920
Ser Ser Cys Arg Ser Val Ser Ile Ile Thr Arg Cys Cys Tyr Tyr Ile
1 5 10 15

<210> 6921
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6921
Trp Ile Pro His Phe Val Ile Lys Asp Ile
1 5 10

<210> 6922
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 6922
Gly Ala Leu Cys Arg Asn Ser Phe Phe Gly Trp Leu Leu Gln Arg Leu
1 5 10 15
Val Leu Phe Arg Thr Ala Tyr Arg Val Arg Cys
20 25

<210> 6923
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6923
Gln Asn Cys Val Pro His Ser Gly Glu Pro Arg Arg Val Ser Ser
1 5 10 15

<210> 6924
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6924
Gly Ser Phe Thr
1

<210> 6925
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6925
Gln Thr Lys Glu Ser Leu Ile Pro Ala Gly Gly
1 5 10

<210> 6926
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 6926
Asp Tyr Lys Ser Val His Asn Cys Gly Gln His
1 5 10

SEQLIST-20480.TXT

<210> 6927
 <211> 24
 <212> PRT
 <213> SARS coronavirus

<400> 6927
 Ser Pro His Thr Ala Cys Gly Tyr Val Tyr Asp Ile Trp Thr Ala Val
 1 5 10 15
 Trp Ser Asn Ile Leu Gly Trp Cys
 20

<210> 6928
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6928
 Cys Tyr Lys Asn
 1

<210> 6929
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6929
 Thr Ser Cys Lys Ser
 1 5

<210> 6930
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6930
 Asp Phe Leu Cys Thr Thr
 1 5

<210> 6931
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6931
 Ser Phe Arg Val Leu Pro Tyr Ser
 1 5

<210> 6932
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6932
 Glu Phe Ser Trp
 1

<210> 6933
 <211> 22
 <212> PRT
 <213> SARS coronavirus

<400> 6933

SEQLIST-20480.TXT

Val His Val Cys Phe Lys Pro His Lys Glu Met Glu Ile Ser Ser Ser
1 5 10 15

Trp Trp Phe Asn Phe Asn
20

<210> 6934
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6934
Gln Leu Leu Phe Val
1 5

<210> 6935
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6935
Cys Phe Ile Ser Thr Ser Thr Ala
1 5

<210> 6936
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 6936
Ser Gln Ile Gln Cys Thr Ser Thr Ser Arg Gly Leu Leu
1 5 10

<210> 6937
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6937
Ser Pro Cys Trp
1

<210> 6938
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6938
Leu Leu Cys Thr His Thr Arg Leu Gln
1 5

<210> 6939
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6939
Asn Cys Trp Arg Ala Trp
1 5

<210> 6940
<211> 12
<212> PRT

<213> SARS coronavirus

<400> 6940
Cys Gln Arg Asn Tyr Asp Pro Ser Ser Thr Ala Cys
1 5 10

<210> 6941

<211> 8

<212> PRT

<213> SARS coronavirus

<400> 6941
Phe Gly Ile Cys Lys Ala Ser Ser
1 5

<210> 6942

<211> 23

<212> PRT

<213> SARS coronavirus

<400> 6942
Thr Leu Trp Ser Glu Asn Tyr Tyr Leu Asn Gly Cys Arg Ser Cys Asp
1 5 10 15

Val Tyr Gly Tyr Ser Ile Leu
20

<210> 6943

<211> 11

<212> PRT

<213> SARS coronavirus

<400> 6943
Asp Arg Cys Phe His Ser Met Cys Val Trp Ser
1 5 10

<210> 6944

<211> 20

<212> PRT

<213> SARS coronavirus

<400> 6944
Cys Tyr Thr Ile Ser Ser Thr Thr Arg Val Phe Phe Cys Tyr Asp Val
1 5 10 15

Cys Thr Thr Cys
20

<210> 6945

<211> 10

<212> PRT

<213> SARS coronavirus

<400> 6945
Ile Thr Ala Arg Tyr Ile Leu Met Cys Glu
1 5 10

<210> 6946

<211> 11

<212> PRT

<213> SARS coronavirus

<400> 6946

Leu Ser Val Trp Ser Leu His Ser Tyr Asn Cys
1 5 10

<210> 6947
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 6947
Gly Asp Pro Leu Ser Tyr
1 5

<210> 6948
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6948
Arg Ser Ser Pro Tyr Lys Asp Val Arg Val Gln Arg Thr Ser Asp
1 5 10 15

<210> 6949
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6949
Cys Phe Leu Gln Gly Asn Ile Leu His Tyr Asn His Gln Ala Cys Val
1 5 10 15

Val

<210> 6950
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6950
Thr Arg Trp Ser Tyr Leu His Arg Asp
1 5

<210> 6951
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6951
Thr Lys Ile Gly Trp Val Leu
1 5

<210> 6952
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 6952
Cys Leu Leu Tyr Arg Ala Ala Tyr Arg Pro Cys Thr Asn Ser Thr Ile
1 5 10 15

Thr Lys Cys Glu Phe
20

SEQLIST-20480.TXT

<210> 6953
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6953
 Phe Gln Thr His Met Phe
 1 5

<210> 6954
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6954
 His Lys Ile Cys
 1

<210> 6955
 <211> 30
 <212> PRT
 <213> SARS coronavirus

<400> 6955
 Phe Lys Ser Asn Asp Arg Leu His Lys Ala Ser Phe Thr Arg Ala Ile
 1 5 10 15
 Cys His Ile Leu Pro Arg Leu Glu Trp Arg Cys Ser Gly Tyr
 20 25 30

<210> 6956
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 6956
 Thr Leu Phe Ser Glu Phe Gln Glu Arg Cys
 1 5 10

<210> 6957
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6957
 Ala Asn Cys Leu Ala His
 1 5

<210> 6958
 <211> 30
 <212> PRT
 <213> SARS coronavirus

<400> 6958
 Pro Gly Tyr Asn Gln Asp Asn Val Gln Thr Lys His Leu Val Phe Thr
 1 5 10 15
 Leu Ser Leu Glu Tyr Lys Ala Ser Arg Tyr Phe Lys Phe Ile
 20 25 30

<210> 6959
 <211> 15
 <212> PRT

<213> SARS coronavirus

<400> 6959
Ser Ser Gly Ser Arg Arg His Thr Arg Asn Gly Gln Ser Cys Leu
1 5 10 15

<210> 6960

<211> 6

<212> PRT

<213> SARS coronavirus

<400> 6960
Lys Ser Thr Thr His Leu
1 5

<210> 6961

<211> 15

<212> PRT

<213> SARS coronavirus

<400> 6961
Arg Ser Ser Gly Lys Ser Tyr His Thr Glu Gly Ser His Arg Val
1 5 10 15

<210> 6962

<211> 12

<212> PRT

<213> SARS coronavirus

<400> 6962
Arg Glu Asn Tyr Arg Ser Cys Arg Gln Cys His Thr
1 5 10

<210> 6963

<211> 7

<212> PRT

<213> SARS coronavirus

<400> 6963
Ser Asn Thr Arg Val Arg Ser
1 5

<210> 6964

<211> 14

<212> PRT

<213> SARS coronavirus

<400> 6964
Gly Ser Tyr Gly Cys Leu Cys Gly Lys His Lys His Tyr His
1 5 10

<210> 6965

<211> 18

<212> PRT

<213> SARS coronavirus

<400> 6965
Ala Phe Thr Ser Leu Arg Phe Lys Asn Asn Cys His Ser Trp Tyr Cys
1 5 10 15

Cys Asn

SEQLIST-20480.TXT

<210> 6966
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6966
 Cys Ser Leu Glu
 1

<210> 6967
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 6967
 Asn Phe Gly Leu Cys Gln Thr Ile Leu Arg Thr Ser Ser Asn Tyr Asn
 1 5 10 15
 Ile Lys Leu Arg
 20

<210> 6968
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6968
 Glu Ile Ser Thr Thr Cys Val
 1 5

<210> 6969
 <211> 17
 <212> PRT
 <213> SARS coronavirus

<400> 6969
 Gln Leu Tyr Ala Leu Cys Val Tyr Ile Ile Val Pro Ile Val Tyr Phe
 1 5 10 15
 Tyr

<210> 6970
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 6970
 Lys Tyr Gln Phe
 1

<210> 6971
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 6971
 Ser Phe Thr Thr Tyr Asn Tyr Cys
 1 5

<210> 6972
 <211> 7
 <212> PRT

<213> SARS coronavirus

<400> 6972
Ile Met Phe Gly Cys Arg His
1 5

<210> 6973
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 6973
Leu Cys Glu Val Thr Gln Ile Phe
1 5

<210> 6974
<211> 30
<212> PRT
<213> SARS coronavirus

<400> 6974
Ile Val His Asn Arg Tyr Val Ala Ile Val Val Lys Tyr Leu Leu Arg
1 5 10 15

Phe Ser Asn Leu Cys Asn Cys Cys Phe Trp Cys Thr Leu Ile
20 25 30

<210> 6975
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6975
Phe Trp Cys Ser Phe Leu Leu
1 5

<210> 6976
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6976
Arg Ile Val Ser
1

<210> 6977
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6977
Arg Tyr Tyr Tyr Gly Phe Leu
1 5

<210> 6978
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6978
Arg Phe Phe Ser Leu Gln His Leu Phe Lys Trp Ile Arg Leu Pro
1 5 10 15

SEQLIST-20480.TXT

<210> 6979
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6979
 Phe Leu Ser Ser Ser
 1 5

<210> 6980
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 6980
 Asn His Ser Gly Asp Asp Phe Ile Val Gln Ala Arg Leu Asp Asn Phe
 1 5 10 15

Arg Ser Gly Arg
 20

<210> 6981
 <211> 29
 <212> PRT
 <213> SARS coronavirus

<400> 6981
 Val Gly Phe Gly Ile Tyr Val Val His Lys Ile Leu Leu Phe Ile Arg
 1 5 10 15

Ser Phe Ser Tyr Asn Ala Gly Val Leu Trp Leu Phe Cys
 20 25

<210> 6982
 <211> 13
 <212> PRT
 <213> SARS coronavirus

<400> 6982
 Ser Phe His Gln Gln Phe Leu Ala His Val Val Tyr His
 1 5 10

<210> 6983
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 6983
 Tyr Cys Thr Asn Gly Thr Arg Phe Cys Asn Gly
 1 5 10

<210> 6984
 <211> 31
 <212> PRT
 <213> SARS coronavirus

<400> 6984
 Asp Val His Leu Leu Cys Phe Phe Leu Leu His Met Glu Glu Leu Cys
 1 5 10 15

Ser Tyr His Gly Trp Leu His Leu Phe Asp Leu His Asp Val Leu
 20 25 30

SEQLIST-20480.TXT

<210> 6985
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 6985
 Ala Gln Ser Cys His Thr Arg
 1 5

<210> 6986
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6986
 Val Tyr Asn Tyr Cys
 1 5

<210> 6987
 <211> 27
 <212> PRT
 <213> SARS coronavirus

<400> 6987
 Trp His Glu Glu Ile Phe Leu Cys Leu Cys Lys Trp Arg Pro Trp Leu
 1 5 10 15

Leu Gln Asp Ser Gln Leu Glu Leu Ser Gln Leu
 20 25

<210> 6988
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6988
 His Ile Leu His Trp
 1 5

<210> 6989
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 6989
 Phe Val Thr Pro Val
 1 5

<210> 6990
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6990
 Lys Thr Asn Gln Pro Tyr
 1 5

<210> 6991
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 6991

Pro Val Ile Val Tyr Cys
1 5

<210> 6992
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 6992
Cys Cys Cys Glu Lys Trp Arg Ala Ser Pro Leu Leu
1 5 10

<210> 6993
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 6993
Gln Gly Trp Ser Lys Asp Leu
1 5

<210> 6994
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 6994
Glu Thr Ser Ala Leu Pro Phe Cys Gln Phe Arg Gln Phe Glu Ser
1 5 10 15

<210> 6995
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 6995
Arg Phe Thr Ala Tyr
1 5

<210> 6996
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 6996
Cys His Ser Phe
1

<210> 6997
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 6997
Trp Gln Val Gln Met Arg Arg Val Cys Phe
1 5 10

<210> 6998
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 6998

SEQLIST-20480.TXT

Val Cys Phe Cys Val Leu Gln Ser Ala Asp Val Pro Thr Tyr Ser Val
1 5 10 15

Ala

<210> 6999
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 6999
Pro Ser Ser Cys Ile Arg Arg Trp Arg
1 5

<210> 7000
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 7000
Cys Leu Cys Arg His Leu Phe Ser Asn Phe
1 5 10

<210> 7001
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7001
Cys Ser Tyr Gly Lys Thr
1 5

<210> 7002
<211> 32
<212> PRT
<213> SARS coronavirus

<400> 7002
Gly Thr Cys Cys Tyr Ser Ser Gln Arg Val Ser Lys Gly Cys Ser Phe
1 5 10 15

Arg Trp Cys Pro Phe Tyr Ile Arg Val Ser Cys Pro Thr Arg Cys Cys
20 25 30

<210> 7003
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 7003
His Lys Gly Cys Tyr
1 5

<210> 7004
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 7004
Met Ser Gln Thr Phe Thr Ser Leu
1 5

SEQLIST-20480.TXT

<210> 7005
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7005
 Leu Arg Ser Asp Arg
 1 5

<210> 7006
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 7006
 Gln Phe His Ala His Leu
 1 5

<210> 7007
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 7007
 Lys His Asp Ala Gln Arg Ser Trp Arg Met Tyr
 1 5 10

<210> 7008
 <211> 27
 <212> PRT
 <213> SARS coronavirus

<400> 7008
 Cys Lys Ala Tyr Gln Cys Pro Ser Ser Lys Lys Ser Gln Cys Phe Thr
 1 5 10 15

His Leu Glu Cys Lys Arg Leu His Val Phe Ile
 20 25

<210> 7009
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 7009
 Cys Cys Gln Glu Glu Gln His Thr Phe
 1 5

<210> 7010
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 7010
 Thr Asn Leu Cys Tyr Asn
 1 5

<210> 7011
 <211> 8
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 7011
Thr Gly Cys Gln Cys His Asn Tyr
1 5

<210> 7012
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7012
Asn Leu Thr Gln Gly Trp
1 5

<210> 7013
<211> 24
<212> PRT
<213> SARS coronavirus

<400> 7013
Gly His Ile Ile Val Arg Ser Cys Cys Ile Gly Leu Leu Tyr Arg Tyr
1 5 10 15

Ala Ser Thr Tyr Ile Val Asn Pro
20

<210> 7014
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7014
Trp Leu His Lys
1

<210> 7015
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7015
Asn His Trp Leu Gln Ser His Ser Gly Trp Cys His Ser
1 5 10

<210> 7016
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7016
His His Phe Tyr
1

<210> 7017
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7017
Leu Phe Cys Lys
1

<210> 7018
<211> 4

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 7018
Thr Cys Trp Phe
1

<210> 7019
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 7019
Pro Ala Trp Trp Phe Ile Gln Lys
1 5

<210> 7020
<211> 31
<212> PRT
<213> SARS coronavirus

<400> 7020
Gln Lys Leu Pro Cys Ser Ser Cys Tyr His Tyr Lys Arg Asp Trp Phe
1 5 10 15
His Ser Ala Trp Leu Thr Gly Tyr Cys Ala Glu Ser Asn Gln Trp
20 25 30

<210> 7021
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7021
Leu Leu Ala Phe Ser Thr Ser Cys Phe
1 5

<210> 7022
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7022
Cys Cys Trp Gln His Leu Leu His Thr Phe Gln Thr His
1 5 10

<210> 7023
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 7023
Phe Cys Tyr Leu Cys Leu Arg Ser Cys Cys
1 5 10

<210> 7024
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7024
Val Tyr Asn Phe
1

SEQLIST-20480.TXT

<210> 7025
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 7025
 Gly Cys Tyr Gly Gln Thr Cys Ala Ile Leu Leu
 1 5 10

<210> 7026
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 7026
 Phe Ala Arg Gly Phe Tyr Phe Leu
 1 5

<210> 7027
 <211> 18
 <212> PRT
 <213> SARS coronavirus

<400> 7027
 Ala Ser Ser Arg His Ser Leu Cys Ala Tyr Gly Trp Phe His His Thr
 1 5 10 15

Val Ser

<210> 7028
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 7028
 His Leu Pro Gly Gly Phe Cys
 1 5

<210> 7029
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7029
 Ser Ser Asn Asn Phe
 1 5

<210> 7030
 <211> 17
 <212> PRT
 <213> SARS coronavirus

<400> 7030
 Thr Trp Tyr Met Arg Lys Val Arg Ser Arg Tyr Leu Pro Ile Tyr Gln
 1 5 10 15

Trp

<210> 7031
 <211> 12

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 7031
Ala Leu Gln Ser Ser Ile Arg Ser Phe Leu Trp Cys
1 5 10

<210> 7032
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7032
Cys Asp Glu Ser His Ser
1 5

<210> 7033
<211> 43
<212> PRT
<213> SARS coronavirus

<400> 7033
His Leu Tyr Ser Ser Cys Ala Thr Cys Gly Cys Phe Arg Cys Val Cys
1 5 10 15
Phe Ser Ser Gly Trp Trp Tyr Tyr Cys His Ile Gly Asp Leu Cys Cys
20 25 30
Leu Leu Leu Tyr Glu Ile Gln Thr Cys Phe Trp
35 40

<210> 7034
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7034
Val Gln Pro Cys Cys Cys Cys
1 5

<210> 7035
<211> 37
<212> PRT
<213> SARS coronavirus

<400> 7035
Cys Thr Phe Val Phe Asp Val Phe His Tyr Thr Leu Ser Gly Thr Ser
1 5 10 15
Leu Gln Leu Ser Ala Gly Ser Leu Leu Ser Leu Leu Leu Val Leu Asp
20 25 30
Ile Leu Phe His Gln
35

<210> 7036
<211> 38
<212> PRT
<213> SARS coronavirus

<400> 7036
Cys Phe Ile Leu Gly Ser Pro Ser Met Val Cys His Val Phe Ser Tyr
1 5 10 15

SEQLIST-20480.TXT

Cys Ala Phe Leu Asp Asn Ser Asn Leu Cys Ile Leu Tyr Phe Ser Glu
20 25 30

Ala Leu Pro Leu Val Leu
35

<210> 7037
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 7037
Glu Lys Ser His Val
1 5

<210> 7038
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7038
Trp Ser Tyr Ile
1

<210> 7039
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 7039
Tyr Leu Arg Gly Gly Cys Phe Val Tyr Leu Phe Ala Gln Gln Gly Asn
1 5 10 15

Val Pro Lys Ile Ala
20

<210> 7040
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7040
Arg Asp Thr Val Ala Thr Tyr Thr Val
1 5

<210> 7041
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7041
Gln Val Ser Cys Ser Ile
1 5

<210> 7042
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 7042
Gln Val Gln Val Phe Gln Trp Ser Leu Arg Tyr Tyr Gln Leu Ser
1 5 10 15

SEQLIST-20480.TXT

<210> 7043
 <211> 11
 <212> PRT
 <213> SARS coronavirus

<400> 7043
 Ser Ser Leu Leu Pro Leu Ser Lys Gly Ser Lys
 1 5 10

<210> 7044
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7044
 Gln Leu Arg Cys
 1

<210> 7045
 <211> 19
 <212> PRT
 <213> SARS coronavirus

<400> 7045
 Cys Ser Leu Pro Thr Thr Thr Asp Ile Asn His Phe Cys Cys Ser Ala
 1 5 10 15

Glu Trp Phe

<210> 7046
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 7046
 Glu Asn Gly Ile Pro Val Arg Gln Ser
 1 5

<210> 7047
 <211> 13
 <212> PRT
 <213> SARS coronavirus

<400> 7047
 Arg Val His Gly Thr Ser Asn Leu Trp Asn Tyr Asn Ser
 1 5 10

<210> 7048
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7048
 Trp Ile Val Val Gly
 1 5

<210> 7049
 <211> 16
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 7049
His Ser Ile Leu Ser Lys Thr Cys His Leu His Ser Arg Arg His Ala
1 5 10 15

<210> 7050
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7050
Arg Ser Ala His Ser Gln Ile Gln Pro
1 5

<210> 7051
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 7051
Leu Ser Cys Ser Gly Trp Gln Cys Ser Thr Ser Cys Tyr Trp Pro Phe
1 5 10 15

Tyr Ala Lys Leu Ser Ala
20

<210> 7052
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7052
Asp Thr Gln Val
1

<210> 7053
<211> 30
<212> PRT
<213> SARS coronavirus

<400> 7053
Ile Cys Pro Tyr Pro Thr Trp Ser Asn Ile Phe Ser Ser Ser Met Leu
1 5 10 15

Gln Trp Phe Thr Ile Trp Cys Leu Ser Val Cys His Glu Thr
20 25 30

<210> 7054
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7054
Arg Phe Phe Pro
1

<210> 7055
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7055
Trp Ile Met Trp

1

<210> 7056
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 7056
 Leu Arg Val Phe Leu Leu Tyr Ala Ser Tyr Gly Ala Ser Asn Arg Ser
 1 5 10 15
 Thr Arg Trp Tyr
 20

<210> 7057
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 7057
 Ile Leu Trp Ser Ile Cys
 1 5

<210> 7058
 <211> 28
 <212> PRT
 <213> SARS coronavirus

<400> 7058
 Gln Thr Asn Cys Thr Gly Cys Arg Tyr Arg His Asn His Asn Ile Lys
 1 5 10 15
 Cys Phe Gly Met Ala Val Cys Cys Cys Tyr Gln Trp
 20 25

<210> 7059
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 7059
 Ile His His Tyr Phe Glu
 1 5

<210> 7060
 <211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 7060
 Pro Cys Gly Asn Glu Val Gln Leu
 1 5

<210> 7061
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 7061
 Thr Phe Asp Thr Arg Ser Cys
 1 5

<210> 7062

SEQLIST-20480.TXT

<211> 35
 <212> PRT
 <213> SARS coronavirus

<400> 7062
 His Ile Gly Thr Ser Phe Cys Ser Asn Arg Asn Cys Arg Leu Arg Tyr
 1 5 10 15
 Val Cys Cys Phe Glu Arg Ala Ala Ala Glu Trp Tyr Glu Trp Ser Tyr
 20 25 30
 Tyr Pro Trp
 35

<210> 7063
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7063
 His Tyr Phe Arg Arg
 1 5

<210> 7064
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7064
 Val Tyr Thr Ile
 1

<210> 7065
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 7065
 Thr Met Leu Trp Cys Tyr Leu Pro Arg
 1 5

<210> 7066
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7066
 Val Gln Glu Asn Cys
 1 5

<210> 7067
 <211> 52
 <212> PRT
 <213> SARS coronavirus

<400> 7067
 Gly His Ser Ser Leu Asp Ala Phe Asn Phe Leu Asp Ile Thr Ile Asp
 1 5 10 15
 Ser Cys Ser Lys Tyr Thr Val Val Thr Val Phe Leu Cys Leu Arg Glu
 20 25 30
 Cys Phe Leu Ala Ile Tyr Ser Trp Tyr Tyr Gly Asn Cys Cys Met Cys

35

40

Tyr Ala Ala Cys
50

<210> 7068
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 7068
Ala Arg Ile Leu Val Leu Val Ser Val Thr Phe Ser Cys Asn Ser Cys
1 5 10 15

Leu Leu

<210> 7069
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7069
Tyr Gly Leu His Ala Cys
1 5

<210> 7070
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7070
Leu Gly Asp Ala Tyr His Asp Met Ala
1 5

<210> 7071
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7071
Leu Val Trp Leu
1

<210> 7072
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 7072
Gly Leu Cys Tyr Val Cys Phe Ser Phe Ser Phe Ala Tyr Ser His Asp
1 5 10 15

Ser Ser His Cys Leu
20

<210> 7073
<211> 18
<212> PRT
<213> SARS coronavirus

<400> 7073
Thr Cys Leu Asp Thr Asp Glu Cys His Tyr Thr Cys Leu Gln Ser Leu

1 5 10 15

Leu Trp

<210> 7074
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 7074
Cys Phe Arg Ser Ser Tyr Phe His Val Gly Leu Ser Tyr Phe Cys Asn
1 5 10 15

Leu

<210> 7075
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 7075
Leu Phe Trp Cys Arg Tyr Asp Tyr His Val Phe Ser
1 5 10

<210> 7076
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7076
Ser Tyr Ser Val Cys Val Cys
1 5

<210> 7077
<211> 47
<212> PRT
<213> SARS coronavirus

<400> 7077
Val Leu Pro Ile Val Ile Tyr Tyr Trp Gln His Leu Thr Val Tyr His
1 5 10 15

Ala Cys Leu Leu Phe Leu Arg Leu Leu Leu Leu Leu Leu Trp Pro
20 25 30

Phe Leu Phe Thr Gln Pro Leu Leu Gln Ala Tyr Ser Trp Cys Leu
35 40 45

<210> 7078
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 7078
Leu Leu Gly Leu Tyr Thr Arg Ile
1 5

<210> 7079
<211> 10
<212> PRT
<213> SARS coronavirus

SEQLIST-20480.TXT

<400> 7079
 val Tyr Glu Leu Pro Gly Ala Phe Ala Ser
 1 5 10

<210> 7080
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7080
 Cys Phe Gln Ala
 1

<210> 7081
 <211> 6
 <212> PRT
 <213> SARS coronavirus

<400> 7081
 val val Gly Tyr Trp Arg
 1 5

<210> 7082
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 7082
 Thr Met Tyr Gln Gly Cys Tyr Cys Thr val
 1 5 10

<210> 7083
 <211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 7083
 Arg Lys Val His Ile Cys Gly Thr Ala Leu Gly Ser Ser Thr Thr
 1 5 10 15

<210> 7084
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7084
 Ser Arg Val Ile Phe
 1 5

<210> 7085
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 7085
 Ile val Gly Thr Met Cys Thr Thr Pro Gln
 1 5 10

<210> 7086
 <211> 8
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 7086
Tyr Ser Ser Cys Lys Arg His Asn
1 5

<210> 7087
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 7087
Ser Phe Arg Glu Asp Gly Phe Ser Phe Val Cys Phe Ala Ile His Ala
1 5 10 15

Gly Cys Cys Arg His
20

<210> 7088
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7088
Val Val Arg Gly Asn Ala Arg
1 5

<210> 7089
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 7089
Pro Cys Tyr Ser Ser Gly Tyr Cys Phe Arg Ile
1 5 10

<210> 7090
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 7090
Phe Phe Thr Ile Ile Cys Arg Leu Cys His Cys Pro Gly Gly Leu
1 5 10 15

<210> 7091
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7091
Ala Gly Cys Ser
1

<210> 7092
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7092
Ser Arg Ser Gln Lys Val Lys Glu Ile Phe Glu Cys Gly
1 5 10

<210> 7093

SEQLIST-20480.TXT

```

<211> 24
<212> PRT
<213> SARS coronavirus

<400> 7093
Cys Cys His Ala Thr Gln Val Gly Lys Asp Gly Arg Ser Gly Tyr Asp
1 5 10 15

Pro Asn Val Gln Thr Gly Lys Ile
20

<210> 7094
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7094
Gly Gln Glu Gly Lys Ser Asn
1 5

<210> 7095
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 7095
Cys Tyr Ala Asn Asn Ala Leu His Tyr Ala
1 5 10

<210> 7096
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7096
Gln His Tyr Gln Gln Cys Ala
1 5

<210> 7097
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 7097
Trp Leu Cys Ser Thr Gln His His Thr Ile Asp Tyr Ser Ser Gln Thr
1 5 10 15

His Gly Cys Cys Pro
20

<210> 7098
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 7098
Leu Trp Tyr Leu Gln Glu His Leu
1 5

<210> 7099
<211> 15
<212> PRT
<213> SARS coronavirus

```

SEQLIST-20480.TXT

<400> 7099
His Leu Tyr Ile Cys Ile Cys Thr Leu Gly Asn Pro Ala Ser Cys
1 5 10 15

<210> 7100
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 7100
Gln Asp Cys Ser Thr
1 5

<210> 7101
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 7101
His Gly Gln Phe Thr Lys Phe Gly Leu Ala Ser Tyr Cys Tyr Ser Ser
1 5 10 15

Lys Ser Gln Leu Ser Cys
20

<210> 7102
<211> 21
<212> PRT
<213> SARS coronavirus

<400> 7102
Thr Glu Ser Ser Ser Thr Thr Thr Asp Val Leu Cys Gly Trp Tyr His
1 5 10 15

Thr Asn Ser Leu Tyr
20

<210> 7103
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7103
Gln Cys Thr Cys Leu Leu
1 5

<210> 7104
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 7104
Gln Phe Glu Gly Arg
1 5

<210> 7105
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 7105
Val Cys Ala Gly Ile Thr Ile Arg Pro Pro Arg Ser Gln Met Gly


```

1              5              10              15

<210> 7106
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7106
Trp Tyr Arg Tyr Asn Leu His Arg Thr Gly Thr Thr Leu
1              5              10

<210> 7107
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7107
Val Cys Tyr Arg His Thr Lys Arg Ala
1              5

<210> 7108
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 7108
Ser Glu Ile Leu Val Leu His Gln Arg Leu Lys Gln Pro Lys
1              5              10

<210> 7109
<211> 38
<212> PRT
<213> SARS coronavirus

<400> 7109
Arg Tyr Gly Ala Gly Gln Phe Ser Cys Tyr Ser Thr Ser Ser Gly Trp
1              5              10              15

Lys Cys Tyr Arg Ser Thr Cys Gln Phe Asn Cys Ala Phe Leu Leu Cys
                20              25              30

Phe Cys Ser Arg Pro Cys
                35

<210> 7110
<211> 33
<212> PRT
<213> SARS coronavirus

<400> 7110
Gly Leu Pro Ser Lys Trp Arg Thr Thr Asn His Gln Leu Cys Glu Asp
1              5              10              15

Val Val Tyr Thr His Trp Tyr Arg Thr Gly Asn Tyr Cys Asn Thr Arg
                20              25              30

Ser

<210> 7111
<211> 15
<212> PRT
<213> SARS coronavirus

```

SEQLIST-20480.TXT

<400> 7111
His Gly Pro Arg Val Leu Trp Trp Cys Phe Met Leu Ser Val Leu
1 5 10 15

<210> 7112
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7112
Pro Ser Lys Ser
1

<210> 7113
<211> 9
<212> PRT
<213> SARS coronavirus

<400> 7113
Val Arg Pro Asn Thr Tyr His Leu Cys
1 5

<210> 7114
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7114
Pro Ser Gly Phe Tyr Thr
1 5

<210> 7115
<211> 15
<212> PRT
<213> SARS coronavirus

<400> 7115
Lys His Ser Leu Tyr Arg Leu Arg Asn Val Glu Arg Leu Trp Leu
1 5 10 15

<210> 7116
<211> 2712
<212> PRT
<213> SARS coronavirus

<400> 7116
Pro Thr Pro Arg Thr Leu Asp Ala Val Cys Gly Cys Ile Asn Val Phe
1 5 10 15

Lys Arg Val Cys Gly Val Ser Ala Ala Arg Leu Thr Pro Cys Gly Thr
20 25 30

Gly Thr Ser Thr Asp Val Val Tyr Arg Ala Phe Asp Ile Tyr Asn Glu
35 40 45

Lys Val Ala Gly Phe Ala Lys Phe Leu Lys Thr Asn Cys Cys Arg Phe
50 55 60

Gln Glu Lys Asp Glu Glu Gly Asn Leu Leu Asp Ser Tyr Phe Val Val
65 70 75 80

Lys Arg His Thr Met Ser Asn Tyr Gln His Glu Glu Thr Ile Tyr Asn

SEQLIST-20480.TXT

85

90

95

Leu Val Lys Asp Cys Pro Ala Val Ala Val His Asp Phe Phe Lys Phe
100 105 110
Arg Val Asp Gly Asp Met Val Pro His Ile Ser Arg Gln Arg Leu Thr
115 120 125
Lys Tyr Thr Met Ala Asp Leu Val Tyr Ala Leu Arg His Phe Asp Glu
130 135 140
Gly Asn Cys Asp Thr Leu Lys Glu Ile Leu Val Thr Tyr Asn Cys Cys
145 150 155 160
Asp Asp Asp Tyr Phe Asn Lys Lys Asp Trp Tyr Asp Phe Val Glu Asn
165 170 175
Pro Asp Ile Leu Arg Val Tyr Ala Asn Leu Gly Glu Arg Val Arg Gln
180 185 190
Ser Leu Leu Lys Thr Val Gln Phe Cys Asp Ala Met Arg Asp Ala Gly
195 200 205
Ile Val Gly Val Leu Thr Leu Asp Asn Gln Asp Leu Asn Gly Asn Trp
210 215 220
Tyr Asp Phe Gly Asp Phe Val Gln Val Ala Pro Gly Cys Gly Val Pro
225 230 235 240
Ile Val Asp Ser Tyr Tyr Ser Leu Leu Met Pro Ile Leu Thr Leu Thr
245 250 255
Arg Ala Leu Ala Ala Glu Ser His Met Asp Ala Asp Leu Ala Lys Pro
260 265 270
Leu Ile Lys Trp Asp Leu Leu Lys Tyr Asp Phe Thr Glu Glu Arg Leu
275 280 285
Cys Leu Phe Asp Arg Tyr Phe Lys Tyr Trp Asp Gln Thr Tyr His Pro
290 295 300
Asn Cys Ile Asn Cys Leu Asp Asp Arg Cys Ile Leu His Cys Ala Asn
305 310 315 320
Phe Asn Val Leu Phe Ser Thr Val Phe Pro Pro Thr Ser Phe Gly Pro
325 330 335
Leu Val Arg Lys Ile Phe Val Asp Gly Val Pro Phe Val Val Ser Thr
340 345 350
Gly Tyr His Phe Arg Glu Leu Gly Val Val His Asn Gln Asp Val Asn
355 360 365
Leu His Ser Ser Arg Leu Ser Phe Lys Glu Leu Leu Val Tyr Ala Ala
370 375 380
Asp Pro Ala Met His Ala Ala Ser Gly Asn Leu Leu Leu Asp Lys Arg
385 390 395 400
Thr Thr Cys Phe Ser Val Ala Ala Leu Thr Asn Asn Val Ala Phe Gln
405 410 415
Thr Val Lys Pro Gly Asn Phe Asn Lys Asp Phe Tyr Asp Phe Ala Val

SEQLIST-20480.TXT

420

425

430

Ser Lys Gly Phe Phe Lys Glu Gly Ser Ser Val Glu Leu Lys His Phe
435 440 445
Phe Phe Ala Gln Asp Gly Asn Ala Ala Ile Ser Asp Tyr Asp Tyr Tyr
450 455 460
Arg Tyr Asn Leu Pro Thr Met Cys Asp Ile Arg Gln Leu Leu Phe Val
465 470 475 480
Val Glu Val Val Asp Lys Tyr Phe Asp Cys Tyr Asp Gly Gly Cys Ile
485 490 495
Asn Ala Asn Gln Val Ile Val Asn Asn Leu Asp Lys Ser Ala Gly Phe
500 505 510
Pro Phe Asn Lys Trp Gly Lys Ala Arg Leu Tyr Tyr Asp Ser Met Ser
515 520 525
Tyr Glu Asp Gln Asp Ala Leu Phe Ala Tyr Thr Lys Arg Asn Val Ile
530 535 540
Pro Thr Ile Thr Gln Met Asn Leu Lys Tyr Ala Ile Ser Ala Lys Asn
545 550 555 560
Arg Ala Arg Thr Val Ala Gly Val Ser Ile Cys Ser Thr Met Thr Asn
565 570 575
Arg Gln Phe His Gln Lys Leu Leu Lys Ser Ile Ala Ala Thr Arg Gly
580 585 590
Ala Thr Val Val Ile Gly Thr Ser Lys Phe Tyr Gly Gly Trp His Asn
595 600 605
Met Leu Lys Thr Val Tyr Ser Asp Val Glu Thr Pro His Leu Met Gly
610 615 620
Trp Asp Tyr Pro Lys Cys Asp Arg Ala Met Pro Asn Met Leu Arg Ile
625 630 635 640
Met Ala Ser Leu Val Leu Ala Arg Lys His Asn Thr Cys Cys Asn Leu
645 650 655
Ser His Arg Phe Tyr Arg Leu Ala Asn Glu Cys Ala Gln Val Leu Ser
660 665 670
Glu Met Val Met Cys Gly Gly Ser Leu Tyr Val Lys Pro Gly Gly Thr
675 680 685
Ser Ser Gly Asp Ala Thr Thr Ala Tyr Ala Asn Ser Val Phe Asn Ile
690 695 700
Cys Gln Ala Val Thr Ala Asn Val Asn Ala Leu Leu Ser Thr Asp Gly
705 710 715 720
Asn Lys Ile Ala Asp Lys Tyr Val Arg Asn Leu Gln His Arg Leu Tyr
725 730 735
Glu Cys Leu Tyr Arg Asn Arg Asp Val Asp His Glu Phe Val Asp Glu
740 745 750
Phe Tyr Ala Tyr Leu Arg Lys His Phe Ser Met Met Ile Leu Ser Asp

755 760 765

Page 1359

SEQLIST-20480.TXT

1090	1095	1100
Leu Ser Trp Glu Val Gly Lys Pro Arg Pro Pro Leu Asn Arg Asn Tyr		
1105	1110	1115
Val Phe Thr Gly Tyr Arg Val Thr Lys Asn Ser Lys Val Gln Ile Gly		
	1125	1130
Glu Tyr Thr Phe Glu Lys Gly Asp Tyr Gly Asp Ala Val Val Tyr Arg		
	1140	1145
Gly Thr Thr Thr Tyr Lys Leu Asn Val Gly Asp Tyr Phe Val Leu Thr		
	1155	1160
Ser His Thr Val Met Pro Leu Ser Ala Pro Thr Leu Val Pro Gln Glu		
	1170	1175
His Tyr Val Arg Ile Thr Gly Leu Tyr Pro Thr Leu Asn Ile Ser Asp		
	1185	1190
Glu Phe Ser Ser Asn Val Ala Asn Tyr Gln Lys Val Gly Met Gln Lys		
	1205	1210
Tyr Ser Thr Leu Gln Gly Pro Pro Gly Thr Gly Lys Ser His Phe Ala		
	1220	1225
Ile Gly Leu Ala Leu Tyr Tyr Pro Ser Ala Arg Ile Val Tyr Thr Ala		
	1235	1240
Cys Ser His Ala Ala Val Asp Ala Leu Cys Glu Lys Ala Leu Lys Tyr		
	1250	1255
Leu Pro Ile Asp Lys Cys Ser Arg Ile Ile Pro Ala Arg Ala Arg Val		
	1265	1270
Glu Cys Phe Asp Lys Phe Lys Val Asn Ser Thr Leu Glu Gln Tyr Val		
	1285	1290
Phe Cys Thr Val Asn Ala Leu Pro Glu Thr Thr Ala Asp Ile Val Val		
	1300	1305
Phe Asp Glu Ile Ser Met Ala Thr Asn Tyr Asp Leu Ser Val Val Asn		
	1315	1320
Ala Arg Leu Arg Ala Lys His Tyr Val Tyr Ile Gly Asp Pro Ala Gln		
	1330	1335
Leu Pro Ala Pro Arg Thr Leu Leu Thr Lys Gly Thr Leu Glu Pro Glu		
	1345	1350
Tyr Phe Asn Ser Val Cys Arg Leu Met Lys Thr Ile Gly Pro Asp Met		
	1365	1370
Phe Leu Gly Thr Cys Arg Arg Cys Pro Ala Glu Ile Val Asp Thr Val		
	1380	1385
Ser Ala Leu Val Tyr Asp Asn Lys Leu Lys Ala His Lys Asp Lys Ser		
	1395	1400
Ala Gln Cys Phe Lys Met Phe Tyr Lys Gly Val Ile Thr His Asp Val		
	1410	1415
Ser Ser Ala Ile Asn Arg Pro Gln Ile Gly Val Val Arg Glu Phe Leu		

SEQLIST-20480.TXT

1425 1430 1435 1440
 Thr Arg Asn Pro Ala Trp Arg Lys Ala Val Phe Ile Ser Pro Tyr Asn
 1445 1450 1455
 Ser Gln Asn Ala Val Ala Ser Lys Ile Leu Gly Leu Pro Thr Gln Thr
 1460 1465 1470
 Val Asp Ser Ser Gln Gly Ser Glu Tyr Asp Tyr Val Ile Phe Thr Gln
 1475 1480 1485
 Thr Thr Glu Thr Ala His Ser Cys Asn Val Asn Arg Phe Asn Val Ala
 1490 1495 1500
 Ile Thr Arg Ala Lys Ile Gly Ile Leu Cys Ile Met Ser Asp Arg Asp
 1505 1510 1515 1520
 Leu Tyr Asp Lys Leu Gln Phe Thr Ser Leu Glu Ile Pro Arg Arg Asn
 1525 1530 1535
 Val Ala Thr Leu Gln Ala Glu Asn Val Thr Gly Leu Phe Lys Asp Cys
 1540 1545 1550
 Ser Lys Ile Ile Thr Gly Leu His Pro Thr Gln Ala Pro Thr His Leu
 1555 1560 1565
 Ser Val Asp Ile Lys Phe Lys Thr Glu Gly Leu Cys Val Asp Ile Pro
 1570 1575 1580
 Gly Ile Pro Lys Asp Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly
 1585 1590 1595 1600
 Phe Lys Met Asn Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr
 1605 1610 1615
 Arg Glu Glu Ala Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val
 1620 1625 1630
 Glu Gly Cys His Ala Thr Arg Asp Ala Val Gly Thr Asn Leu Pro Leu
 1635 1640 1645
 Gln Leu Gly Phe Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly
 1650 1655 1660
 Tyr Val Asp Thr Glu Asn Asn Thr Glu Phe Thr Arg Val Asn Ala Lys
 1665 1670 1675 1680
 Pro Pro Pro Gly Asp Gln Phe Lys His Leu Ile Pro Leu Met Tyr Lys
 1685 1690 1695
 Gly Leu Pro Trp Asn Val Val Arg Ile Lys Ile Val Gln Met Leu Ser
 1700 1705 1710
 Asp Thr Leu Lys Gly Leu Ser Asp Arg Val Val Phe Val Leu Trp Ala
 1715 1720 1725
 His Gly Phe Glu Leu Thr Ser Met Lys Tyr Phe Val Lys Ile Gly Pro
 1730 1735 1740
 Glu Arg Thr Cys Cys Leu Cys Asp Lys Arg Ala Thr Cys Phe Ser Thr
 1745 1750 1755 1760
 Ser Ser Asp Thr Tyr Ala Cys Trp Asn His Ser Val Gly Phe Asp Tyr

SEQLIST-20480.TXT

1765		1770	1775
Val Tyr Asn Pro Phe Met Ile Asp	Val Gln Gln Trp Gly Phe Thr Gly		
1780	1785	1790	
Asn Leu Gln Ser Asn His Asp	Gln His Cys Gln Val His Gly Asn Ala		
1795	1800	1805	
His Val Ala Ser Cys Asp	Ala Ile Met Thr Arg Cys Leu Ala Val His		
1810	1815	1820	
Glu Cys Phe Val Lys Arg Val Asp Trp Ser	Val Glu Tyr Pro Ile Ile		
1825	1830	1835	1840
Gly Asp Glu Leu Arg Val Asn Ser Ala Cys Arg Lys Val Gln His Met			
	1845	1850	1855
Val Val Lys Ser Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp			
	1860	1865	1870
Ile Gly Asn Pro Lys Ala Ile Lys Cys Val Pro Gln Ala Glu Val Glu			
	1875	1880	1885
Trp Lys Phe Tyr Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile			
	1890	1895	1900
Glu Glu Leu Phe Tyr Ser Tyr Ala Thr His His Asp Lys Phe Thr Asp			
	1905	1910	1915
Gly Val Cys Leu Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro Ala Asn			
	1925	1930	1935
Ala Ile Val Cys Arg Phe Asp Thr Arg Val Leu Ser Asn Leu Asn Leu			
	1940	1945	1950
Pro Gly Cys Asp Gly Gly Ser Leu Tyr Val Asn Lys His Ala Phe His			
	1955	1960	1965
Thr Pro Ala Phe Asp Lys Ser Ala Phe Thr Asn Leu Lys Gln Leu Pro			
	1970	1975	1980
Phe Phe Tyr Tyr Ser Asp Ser Pro Cys Glu Ser His Gly Lys Gln Val			
	1985	1990	1995
Val Ser Asp Ile Asp Tyr Val Pro Leu Lys Ser Ala Thr Cys Ile Thr			
	2000	2005	2010
Arg Cys Asn Leu Gly Gly Ala Val Cys Arg His His Ala Asn Glu Tyr			
	2015	2020	2025
Arg Gln Tyr Leu Asp Ala Tyr Asn Met Met Ile Ser Ala Gly Phe Ser			
	2030	2035	2040
Leu Trp Ile Tyr Lys Gln Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe			
	2045	2050	2055
Thr Arg Leu Gln Ser Leu Glu Asn Val Ala Tyr Asn Val Val Asn Lys			
	2060	2065	2070
Gly His Phe Asp Gly His Ala Gly Glu Ala Pro Val Ser Ile Ile Asn			
	2075	2080	2085
Asn Ala Val Tyr Thr Lys Val Asp Gly Ile Asp Val Glu Ile Phe Glu			
	2090	2095	

SEQLIST-20480.TXT

2100 2105 2110

Asn Lys Thr Thr Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys
2115 2120 2125

Arg Asn Ile Lys Pro Val Pro Glu Ile Lys Ile Leu Asn Asn Leu Gly
2130 2135 2140

Val Asp Ile Ala Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Glu Ala
2145 2150 2160

Pro Ala His Val Ser Thr Ile Gly Val Cys Thr Met Thr Asp Ile Ala
2165 2170 2175

Lys Lys Pro Thr Glu Ser Ala Cys Ser Ser Leu Thr Val Leu Phe Asp
2180 2185 2190

Gly Arg Val Glu Gly Gln Val Asp Leu Phe Arg Asn Ala Arg Asn Gly
2195 2200 2205

Val Leu Ile Thr Glu Gly Ser Val Lys Gly Leu Thr Pro Ser Lys Gly
2210 2215 2220

Pro Ala Gln Ala Ser Val Asn Gly Val Thr Leu Ile Gly Glu Ser Val
2225 2230 2235 2240

Lys Thr Gln Phe Asn Tyr Phe Lys Lys Val Asp Gly Ile Ile Gln Gln
2245 2250 2255

Leu Pro Glu Thr Tyr Phe Thr Gln Ser Arg Asp Leu Glu Asp Phe Lys
2260 2265 2270

Pro Arg Ser Gln Met Glu Thr Asp Phe Leu Glu Leu Ala Met Asp Glu
2275 2280 2285

Phe Ile Gln Arg Tyr Lys Leu Glu Gly Tyr Ala Phe Glu His Ile Val
2290 2295 2300

Tyr Gly Asp Phe Ser His Gly Gln Leu Gly Gly Leu His Leu Met Ile
2305 2310 2315 2320

Gly Leu Ala Lys Arg Ser Gln Asp Ser Pro Leu Lys Leu Glu Asp Phe
2325 2330 2335

Ile Pro Met Asp Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln
2340 2345 2350

Thr Gly Ser Ser Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp
2355 2360 2365

Asp Phe Val Glu Ile Ile Lys Ser Gln Asp Leu Ser Val Ile Ser Lys
2370 2375 2380

Val Val Lys Val Thr Ile Asp Tyr Ala Glu Ile Ser Phe Met Leu Trp
2385 2390 2395 2400

Cys Lys Asp Gly His Val Glu Thr Phe Tyr Pro Lys Leu Gln Ala Ser
2405 2410 2415

Arg Ala Trp Gln Pro Gly Val Ala Met Pro Asn Leu Tyr Lys Met Gln
2420 2425 2430

Arg Met Leu Leu Glu Lys Cys Asp Leu Gln Asn Tyr Gly Glu Asn Ala

SEQLIST-20480.TXT

2435 2440 2445
Val Ile Pro Lys Gly Ile Met Met Asn Val Ala Lys Tyr Thr Gln Leu
2450 2455 2460
Cys Gln Tyr Leu Asn Thr Leu Thr Leu Ala Val Pro Tyr Asn Met Arg
2465 2470 2475 2480
Val Ile His Phe Gly Ala Gly Ser Asp Lys Gly Val Ala Pro Gly Thr
2485 2490 2495
Ala Val Leu Arg Gln Trp Leu Pro Thr Gly Thr Leu Leu Val Asp Ser
2500 2505 2510
Asp Leu Asn Asp Phe Val Ser Asp Ala Tyr Ser Thr Leu Ile Gly Asp
2515 2520 2525
Cys Ala Thr Val His Thr Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp
2530 2535 2540
Met Tyr Asp Pro Arg Thr Lys His Val Thr Lys Glu Asn Asp Ser Lys
2545 2550 2555 2560
Glu Gly Phe Phe Thr Tyr Leu Cys Gly Phe Ile Lys Gln Lys Leu Ala
2565 2570 2575
Leu Gly Gly Ser Ile Ala Val Lys Ile Thr Glu His Ser Trp Asn Ala
2580 2585 2590
Asp Leu Tyr Lys Leu Met Gly His Phe Ser Trp Trp Thr Ala Phe Val
2595 2600 2605
Thr Asn Val Asn Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Ala Asn
2610 2615 2620
Tyr Leu Gly Lys Pro Lys Glu Gln Ile Asp Gly Tyr Thr Met His Ala
2625 2630 2635 2640
Asn Tyr Ile Phe Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser Ser Tyr
2645 2650 2655
Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys Leu Arg Gly Thr Ala
2660 2665 2670
Val Met Ser Leu Lys Glu Asn Gln Ile Asn Asp Met Ile Tyr Ser Leu
2675 2680 2685
Leu Glu Lys Gly Arg Leu Ile Ile Arg Glu Asn Asn Arg Val Val Val
2690 2695 2700
Ser Ser Asp Ile Leu Val Asn Asn
2705 2710

<210> 7117
<211> 1257
<212> PRT
<213> SARS coronavirus

<400> 7117
Thr Asn Met Phe Ile Phe Leu Leu Phe Leu Thr Leu Thr Ser Gly Ser
1 5 10 15

Asp Leu Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr

30

Page 1365

SEQLIST-20480.TXT

```

355                               360                               365
Tyr Gly Val Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val
370 375 380
Tyr Ala Asp Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala
385 390 395
Pro Gly Gln Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp
405 410 415
Asp Phe Met Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala
420 425 430
Thr Ser Thr Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly
435 440 445
Lys Leu Arg Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro
450 455 460
Asp Gly Lys Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu
465 470 475
Asn Asp Tyr Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr
485 490 495
Arg Val Val Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val
500 505 510
Cys Gly Pro Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn
515 520 525
Phe Asn Phe Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser
530 535 540
Lys Arg Phe Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe
545 550 555
Thr Asp Ser Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser
565 570 575
Pro Cys Ala Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala
580 585 590
Ser Ser Glu Val Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val
595 600 605
Ser Thr Ala Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr
610 615 620
Ser Thr Gly Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly
625 630 635
Ala Glu His Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala
645 650 655
Gly Ile Cys Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser
660 665 670
Gln Lys Ser Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser
675 680 685
Ile Ala Tyr Ser Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile

```

SEQLIST-20480.TXT

690		695		700
Ser 705	Ile Thr Thr Glu Val 710	Met Pro Val Ser 715	Met Ala Lys Thr Ser 720	
Asp 725	Cys Asn Met Tyr 725	Ile Cys Gly Asp 730	Ser Thr Glu Cys Ala Asn 735	Leu
Leu 740	Leu Gln Tyr 740	Gly Ser Phe Cys Thr 745	Gln Leu Asn Arg Ala 750	Leu Ser
Gly 755	Ile Ala Ala Glu Gln Asp 760	Arg Asn Thr Arg Glu Val 765	Phe Ala Gln	
Val 770	Lys Gln Met Tyr Lys Thr 775	Pro Thr Leu Lys Tyr 780	Phe Gly Gly Phe	
Asn 785	Phe Ser Gln Ile Leu 790	Pro Asp Pro Leu Lys 795	Pro Thr Lys Arg Ser 800	
Phe 805	Ile Glu Asp Leu 805	Leu Phe Asn Lys Val 810	Thr Leu Ala Asp Ala 815	Gly
Phe 820	Met Lys Gln Tyr Gly Glu Cys 825	Leu Gly Asp Ile Asn Ala 830	Arg Asp	
Leu 835	Ile Cys Ala Gln Lys Phe Asn 840	Gly Leu Thr Val Leu 845	Pro Pro Leu	
Leu 850	Thr Asp Asp Met Ile Ala 855	Ala Tyr Thr Ala Ala 860	Leu Val Ser Gly	
Thr 865	Ala Thr Ala Gly Trp 870	Thr Phe Gly Ala Gly 875	Ala Ala Leu Gln Ile 880	
Pro 885	Phe Ala Met Gln Met Ala Tyr Arg 890	Phe Asn Gly Ile Gly Val 895	Thr	
Gln 900	Asn Val Leu Tyr Glu Asn Gln Lys 905	Gln Ile Ala Asn Gln 910	Phe Asn	
Lys 915	Ala Ile Ser Gln Ile Gln Glu 920	Ser Leu Thr Thr Thr 925	Ser Thr Ala	
Leu 930	Gly Lys Leu Gln Asp Val 935	Val Asn Gln Asn Ala 940	Gln Ala Leu Asn	
Thr 945	Leu Val Lys Gln Leu 950	Ser Ser Asn Phe Gly 955	Ala Ile Ser Ser Val 960	
Leu 965	Asn Asp Ile Leu 965	Ser Arg Leu Asp Lys 970	Val Glu Ala Glu Val 975	Gln
Ile 980	Asp Arg Leu Ile Thr Gly Arg 985	Leu Gln Ser Leu Gln Thr 990	Tyr Val	
Thr 995	Gln Gln Leu Ile Arg Ala 1000	Ala Glu Ile Arg Ala Ser 1005	Ala Asn Leu	
Ala 1010	Ala Thr Lys Met Ser Glu 1015	Cys Val Leu Gly Gln 1020	Ser Lys Arg Val	
Asp	Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala			

SEQLIST-20480.TXT

1025 1030 1035 1040

Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu
 1045 1050 1055

Arg Asn Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr
 1060 1065 1070

Phe Pro Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile
 1075 1080 1085

Thr Gln Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr
 1090 1095 1100

Phe Val Ser Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr
 1105 1110 1115 1120

Val Tyr Asp Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu
 1125 1130 1135

Asp Lys Tyr Phe Lys Asn His Thr Ser Pro Asp Val Asp Leu Gly Asp
 1140 1145 1150

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1155 1160 1165

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 1170 1175 1180

Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val
 1185 1190 1195 1200

Trp Leu Gly Phe Ile Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile
 1205 1210 1215

Leu Leu Cys Cys Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys
 1220 1225 1230

Ser Cys Gly Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val
 1235 1240 1245

Leu Lys Gly Val Lys Leu His Tyr Thr
 1250 1255

<210> 7118
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 7118
 Thr Asn Leu Trp Ile Cys Leu
 1 5

<210> 7119
 <211> 12
 <212> PRT
 <213> SARS coronavirus

<400> 7119
 Asp Phe Leu Leu Leu Asp Gln Leu Leu His Ser Gln
 1 5 10

<210> 7120

SEQLIST-20480.TXT

<211> 43
<212> PRT
<213> SARS coronavirus

<400> 7120
Lys Leu Thr Met Leu Leu Leu Gln Val Leu Phe Met Leu Gln Gln Arg
1 5 10 15
Tyr Arg Tyr Lys Pro His Ser Leu Ser Asp Gly Leu Leu Leu Ala Leu
20 25 30
His Phe Leu Leu Phe Phe Arg Ala Leu Pro Lys
35 40

<210> 7121
<211> 8
<212> PRT
<213> SARS coronavirus

<400> 7121
Leu Arg Ser Ile Lys Asp Gly Ser
1 5

<210> 7122
<211> 39
<212> PRT
<213> SARS coronavirus

<400> 7122
Pro Phe Ile Arg Ala Ser Ser Ser Phe Ala Ile Tyr Cys Cys Tyr Leu
1 5 10 15
Leu Pro Ser Ile His Ile Phe Cys Leu Ser Leu Gln Val Trp Arg Arg
20 25 30
Asn Phe Cys Thr Ser Met Pro
35

<210> 7123
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7123
Tyr Ile Phe Tyr Asn Ala Ser Thr His Val Glu Leu Leu
1 5 10

<210> 7124
<211> 169
<212> PRT
<213> SARS coronavirus

<400> 7124
Asp Val Gly Phe Val Gly Ser Ala Asn Pro Arg Thr His Tyr Phe Met
1 5 10 15
Met Pro Thr Thr Leu Phe Ala Gly Thr His Ile Thr Met Thr Thr Val
20 25 30
Tyr His Ile Thr Val Ser Gln Ile Gln Leu Ser Leu Leu Lys Val Thr
35 40 45
Ala Phe Gln His Gln Asn Ser Lys Lys Thr Thr Lys Leu Val Val Ile

SEQLIST-20480.TXT

50

55

60

Leu Arg Ile Gly Thr Gln Val Leu Lys Thr Met Ser Leu Tyr Met Ala
65 70 75 80
Ile Ser Pro Lys Phe Thr Thr Ser Leu Ser Leu His Lys Leu Leu Gln
85 90 95
Thr Leu Val Leu Lys Met Leu His Ser Ser Ser Leu Thr Ser Leu Leu
100 105 110
Lys Thr His Arg Met Cys Lys Tyr Thr Gln Ser Thr Ala Leu Gln Glu
115 120 125
Leu Leu Ile Gln Gln Trp Ile Gln Phe Met Met Ser Arg Arg Arg Leu
130 135 140
Leu Ala Cys Leu Cys Lys His Lys Lys Val Ser Thr Asn Leu Cys Thr
145 150 155 160
His Ser Phe Arg Lys Lys Gln Val Arg
165

<210> 7125
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 7125
Leu Ile Ala Tyr Phe Phe Phe Leu Leu Ser Trp Tyr Ser Cys
1 5 10

<210> 7126
<211> 17
<212> PRT
<213> SARS coronavirus

<400> 7126
Pro Ser Leu Leu Arg Phe Asp Cys Val Arg Thr Ala Ala Ile Leu Leu
1 5 10 15

Thr

<210> 7127
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 7127
Asn Gln Arg Phe Thr Ser Thr Arg Val Leu Lys Ile
1 5 10

<210> 7128
<211> 37
<212> PRT
<213> SARS coronavirus

<400> 7128
Thr Leu Leu Lys Glu Phe Leu Ile Phe Trp Ser Lys Arg Thr Asn Tyr
1 5 10 15

Tyr Tyr Tyr Ser Val Trp Asn Phe Asn Ile Ala Tyr His Gly Arg Gln

20
Arg Tyr Tyr Tyr Arg
35

<210> 7129
<211> 26
<212> PRT
<213> SARS coronavirus

<400> 7129
Thr Thr Pro Gly Thr Met Glu Pro Ser Asn Arg Phe Pro Ile Pro Ser
1 5 10 15

Leu Asp Tyr Val Thr Thr Ile Cys Leu Phe
20 25

<210> 7130
<211> 32
<212> PRT
<213> SARS coronavirus

<400> 7130
Ser Glu Gln Val Phe Val His Asn Lys Ala Cys Phe Pro Leu Ala Leu
1 5 10 15

Val Ala Ser Asn Thr Cys Leu Phe Cys Ala Cys Cys Cys Leu Gln Asn
20 25 30

<210> 7131
<211> 19
<212> PRT
<213> SARS coronavirus

<400> 7131
Leu Gly Asp Trp Arg Asp Cys Asp Cys Asn Gly Leu Tyr Cys Arg Leu
1 5 10 15

Asp Val Ala

<210> 7132
<211> 42
<212> PRT
<213> SARS coronavirus

<400> 7132
Leu Leu Arg Cys Phe Leu Gln Ala Val Cys Ser Tyr Pro Leu Asn Val
1 5 10 15

Val Ile Gln Pro Arg Asn Lys His Ser Ser Gln Cys Ala Ser Pro Gly
20 25 30

Asp Asn Cys Asp Gln Thr Ala His Gly Lys
35 40

<210> 7133
<211> 22
<212> PRT
<213> SARS coronavirus

<400> 7133

SEQLIST-20480.TXT

Thr Cys His Trp Cys Cys Asp His Ser Trp Ser Leu Ala Asn Gly Arg
1 5 10 15

Thr Leu Pro Arg Ala Leu
20

<210> 7134
<211> 27
<212> PRT
<213> SARS coronavirus

<400> 7134
Gly Pro Ala Lys Arg Asp His Cys Gly Tyr Ile Thr Asn Ala Phe Leu
1 5 10 15

Leu Gln Ile Arg Ser Val Ala Ala Cys Arg His
20 25

<210> 7135
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 7135
Phe Arg Phe Cys Cys Ile Gln Pro Leu Pro Tyr Trp Lys Leu
1 5 10

<210> 7136
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7136
Ile Lys Tyr Arg Pro Arg Arg
1 5

<210> 7137
<211> 24
<212> PRT
<213> SARS coronavirus

<400> 7137
Gln Arg Gln Tyr Cys Phe Ala Ser Thr Val Ser Asp Asn Arg Cys Phe
1 5 10 15

Ile Leu Leu Thr Ser Arg Leu Gln
20

<210> 7138
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 7138
Gly Leu Ser Gly Leu Leu Phe Gly Ile Leu Thr Leu
1 5 10

<210> 7139
<211> 6
<212> PRT
<213> SARS coronavirus

<400> 7139

SEQLIST-20480.TXT

Asp Asn Tyr Leu Ser Leu
1 5

<210> 7140
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7140
Leu Arg Arg Ile Ile Arg Ser
1 5

<210> 7141
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7141
Met Met Lys Asn Leu Trp Ser
1 5

<210> 7142
<211> 128
<212> PRT
<213> SARS coronavirus

<400> 7142
Ile Ile His Lys Thr Asn Met Lys Ile Ile Leu Phe Leu Thr Leu Ile
1 5 10 15
Val Phe Thr Ser Cys Glu Leu Tyr His Tyr Gln Glu Cys Val Arg Gly
20 25 30
Thr Thr Val Leu Leu Lys Glu Pro Cys Pro Ser Gly Thr Tyr Glu Gly
35 40 45
Asn Ser Pro Phe His Pro Leu Ala Asp Asn Lys Phe Ala Leu Thr Cys
50 55 60
Thr Ser Thr His Phe Ala Phe Ala Cys Ala Asp Gly Thr Arg His Thr
65 70 75 80
Tyr Gln Leu Arg Ala Arg Ser Val Ser Pro Lys Leu Phe Ile Arg Gln
85 90 95
Glu Glu Val Gln Gln Glu Leu Tyr Ser Pro Leu Phe Leu Ile Val Ala
100 105 110
Ala Leu Val Phe Leu Ile Leu Cys Phe Thr Ile Lys Arg Lys Thr Glu
115 120 125

<210> 7143
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7143
Met Ser Ser Leu
1

<210> 7144
<211> 7

SEQLIST-20480.TXT

<212> PRT
<213> SARS coronavirus

<400> 7144
Leu Thr Ser Ile Cys Ala Phe
1 5

<210> 7145
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7145
Pro Phe Cys Tyr Ser Leu Phe
1 5

<210> 7146
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7146
Cys Leu Leu Tyr Phe Gly Phe His Ser Lys Ser Arg Ile
1 5 10

<210> 7147
<211> 10
<212> PRT
<213> SARS coronavirus

<400> 7147
Lys Asn Leu Val Pro Lys Ser Lys Arg Thr
1 5 10

<210> 7148
<211> 5
<212> PRT
<213> SARS coronavirus

<400> 7148
Asn Phe Ser Leu Phe
1 5

<210> 7149
<211> 11
<212> PRT
<213> SARS coronavirus

<400> 7149
Leu Val Phe Leu Tyr Ala Val Ala Tyr Ala Leu
1 5 10

<210> 7150
<211> 93
<212> PRT
<213> SARS coronavirus

<400> 7150
Tyr Ser Ala Val His Leu Ile Asn Leu Met Cys Leu Lys Ile Leu Val
1 5 10 15

Arg Tyr Asn Thr Arg Gly Asn Thr Tyr Ser Thr Ala Trp Leu Cys Ala
20 25 30

SEQLIST-20480.TXT

Leu Gly Lys Val Leu Pro Phe His Arg Trp His Thr Met Val Gln Thr
35 40 45
Cys Thr Pro Asn Val Thr Ile Asn Cys Gln Asp Pro Ala Gly Gly Ala
50 55 60
Leu Ile Ala Arg Cys Trp Tyr Leu His Glu Gly His Gln Thr Ala Ala
65 70 75 80
Phe Arg Asp Val Leu Val Val Leu Asn Lys Arg Thr Asn
85 90

<210> 7151
<211> 7
<212> PRT
<213> SARS coronavirus

<400> 7151
Trp Thr Pro Ile Lys Pro Thr
1 5

<210> 7152
<211> 13
<212> PRT
<213> SARS coronavirus

<400> 7152
Cys Pro Pro His Tyr Ile Trp Trp Thr His Arg Phe Asn
1 5 10

<210> 7153
<211> 20
<212> PRT
<213> SARS coronavirus

<400> 7153
Pro Glu Trp Arg Thr Gln Trp Gly Lys Ala Lys Thr Ala Pro Thr Pro
1 5 10 15

Arg Phe Thr Gln
20

<210> 7154
<211> 16
<212> PRT
<213> SARS coronavirus

<400> 7154
Tyr Cys Val Leu Val His Ser Ser His Ser Ala Trp Gln Gly Gly Thr
1 5 10 15

<210> 7155
<211> 12
<212> PRT
<213> SARS coronavirus

<400> 7155
Ile Pro Ser Arg Pro Gly Arg Ser Asn Gln His Gln
1 5 10

<210> 7156

SEQLIST-20480.TXT

<211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 7156
 Pro Asn Trp Leu Leu Pro Lys Ser Tyr Pro Thr Ser Ser Trp Trp
 1 5 10 15

<210> 7157
 <211> 27
 <212> PRT
 <213> SARS coronavirus

<400> 7157
 Arg Gln Asn Glu Arg Ala Gln Pro Gln Met Val Leu Leu Leu Pro Arg
 1 5 10 15

Asn Trp Pro Arg Ser Phe Thr Ser Leu Arg Arg
 20 25

<210> 7158
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 7158
 Gln Arg Arg His Arg Met Gly Cys Asn
 1 5

<210> 7159
 <211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 7159
 Gly Ser Leu Glu Tyr Thr Gln Arg Pro His Trp His Pro Gln Ser
 1 5 10 15

<210> 7160
 <211> 36
 <212> PRT
 <213> SARS coronavirus

<400> 7160
 Gln Cys Cys His Arg Ala Thr Thr Ser Ser Arg Asn Asn Ile Ala Lys
 1 5 10 15

Arg Leu Leu Arg Arg Gly Lys Gln Arg Arg Gln Ser Ser Leu Phe Ser
 20 25 30

Leu Leu Ile Thr
 35

<210> 7161
 <211> 9
 <212> PRT
 <213> SARS coronavirus

<400> 7161
 Phe Lys Lys Phe Asn Ser Trp Gln Gln
 1 5

<210> 7162

SEQLIST-20480.TXT

<211> 8
 <212> PRT
 <213> SARS coronavirus

<400> 7162
 Gly Lys Phe Ser Cys Ser Asn Gly
 1 5

<210> 7163
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 7163
 Asn Cys Pro Arg Ala Ile Ala Ala Arg Gln Ile Glu Pro Ala
 1 5 10

<210> 7164
 <211> 5
 <212> PRT
 <213> SARS coronavirus

<400> 7164
 Glu Gln Ser Phe Trp
 1 5

<210> 7165
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 7165
 Arg Pro Thr Thr Thr Arg Pro Asn Cys His
 1 5 10

<210> 7166
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7166
 Glu Ile Cys Cys
 1

<210> 7167
 <211> 40
 <212> PRT
 <213> SARS coronavirus

<400> 7167
 Lys Ala Ser Pro Lys Thr Tyr Cys His Lys Thr Val Gln Arg His Ser
 1 5 10 15

Ser Ile Trp Glu Thr Trp Ser Arg Thr Asn Pro Arg Lys Phe Arg Gly
 20 25 30

Pro Arg Pro Asn Gln Thr Arg Asn
 35 40

<210> 7168
 <211> 40
 <212> PRT
 <213> SARS coronavirus

SEQLIST-20480.TXT

<400> 7168
 Leu Gln Thr Leu Ala Ala Asn Cys Thr Ile Cys Ser Lys Cys Leu Cys
 1 5 10 15
 Ile Leu Trp Asn Val Thr His Trp His Gly Ser His Thr Phe Gly Asn
 20 25 30
 Met Ala Asp Leu Ser Trp Ser His
 35 40

<210> 7169
 <211> 16
 <212> PRT
 <213> SARS coronavirus

<400> 7169
 Gln Arg Ser Thr Ile Gln Arg Gln Arg His Thr Ala Glu Gln Ala His
 1 5 10 15

<210> 7170
 <211> 10
 <212> PRT
 <213> SARS coronavirus

<400> 7170
 Arg Ile Gln Asn Ile Pro Thr Asn Arg Ala
 1 5 10

<210> 7171
 <211> 7
 <212> PRT
 <213> SARS coronavirus

<400> 7171
 Lys Gly Gln Lys Glu Lys Asp
 1 5

<210> 7172
 <211> 20
 <212> PRT
 <213> SARS coronavirus

<400> 7172
 Ser Ser Ala Phe Ala Ala Glu Thr Lys Glu Ala Ala His Cys Asp Ser
 1 5 10 15

Ser Ser Cys Gly
 20

<210> 7173
 <211> 14
 <212> PRT
 <213> SARS coronavirus

<400> 7173
 Phe Leu Gln Thr Thr Ser Lys Phe His Glu Trp Ser Phe Cys
 1 5 10

<210> 7174
 <211> 39
 <212> PRT

<213> SARS coronavirus

<400> 7174

Phe Asn Ser Gly Ile Asn Thr His Asp Asp His Thr Arg Gln Met Gly
1 5 10 15

Tyr Val Asn Val Phe Ala Ile Pro Phe Thr Ile His Ser Leu Leu Leu
20 25 30

Cys Arg Met Asn Ser Arg Asn
35

<210> 7175

<211> 12

<212> PRT

<213> SARS coronavirus

<400> 7175

Thr Ala Gln Val Gly Leu Val Asn Phe Asn Leu Thr
1 5 10

<210> 7176

<211> 6

<212> PRT

<213> SARS coronavirus

<400> 7176

Gln Ser Leu Ile Asn Val
1 5

<210> 7177

<211> 21

<212> PRT

<213> SARS coronavirus

<400> 7177

Gly Gly Leu Glu Arg Ala Thr Thr Phe Ser Ser Arg Pro Arg Gly Val
1 5 10 15

Arg Ser Arg Val Gln
20

<210> 7178

<211> 12

<212> PRT

<213> SARS coronavirus

<400> 7178

Ile Met Leu Gly Arg Ala Ala Tyr Met Glu Glu Pro
1 5 10

<210> 7179

<211> 18

<212> PRT

<213> SARS coronavirus

<400> 7179

Cys Val Lys Leu Ile Leu Val Val Leu Ser Pro Cys Asp Phe Asn Ser
1 5 10 15

Phe Leu

<210> 7180
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7180
 Asn Gly Thr Cys
 1

<210> 7181
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7181
 Asn His Ser Asn
 1

<210> 7182
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7182
 Asn Phe Ser Ser
 1

<210> 7183
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7183
 Asn His Thr Lys
 1

<210> 7184
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7184
 Asn Lys Thr Val
 1

<210> 7185
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7185
 Asn Ser Ser Asn
 1

<210> 7186
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7186
 Asn Val Ser Leu
 1

SEQLIST-20480.TXT

<210> 7187
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7187
 Asn Ala Thr Glu
 1

<210> 7188
 <211> 2712
 <212> PRT
 <213> SARS coronavirus

<400> 7188
 Pro Thr Pro Arg Thr Leu Asp Ala Val Cys Gly Cys Ile Asn Val Phe
 1 5 10 15
 Lys Arg Val Cys Gly Val Ser Ala Ala Arg Leu Thr Pro Cys Gly Thr
 20 25 30
 Gly Thr Ser Thr Asp Val Val Tyr Arg Ala Phe Asp Ile Tyr Asn Glu
 35 40 45
 Lys Val Ala Gly Phe Ala Lys Phe Leu Lys Thr Asn Cys Cys Arg Phe
 50 55 60
 Gln Glu Lys Asp Glu Glu Gly Asn Leu Leu Asp Ser Tyr Phe Val Val
 65 70 75 80
 Lys Arg His Thr Met Ser Asn Tyr Gln His Glu Glu Thr Ile Tyr Asn
 85 90 95
 Leu Val Lys Asp Cys Pro Ala Val Ala Val His Asp Phe Phe Lys Phe
 100 105 110
 Arg Val Asp Gly Asp Met Val Pro His Ile Ser Arg Gln Arg Leu Thr
 115 120 125
 Lys Tyr Thr Met Ala Asp Leu Val Tyr Ala Leu Arg His Phe Asp Glu
 130 135 140
 Gly Asn Cys Asp Thr Leu Lys Glu Ile Leu Val Thr Tyr Asn Cys Cys
 145 150 155 160
 Asp Asp Asp Tyr Phe Asn Lys Lys Asp Trp Tyr Asp Phe Val Glu Asn
 165 170 175
 Pro Asp Ile Leu Arg Val Tyr Ala Asn Leu Gly Glu Arg Val Arg Gln
 180 185 190
 Ser Leu Leu Lys Thr Val Gln Phe Cys Asp Ala Met Arg Asp Ala Gly
 195 200 205
 Ile Val Gly Val Leu Thr Leu Asp Asn Gln Asp Leu Asn Gly Asn Trp
 210 215 220
 Tyr Asp Phe Gly Asp Phe Val Gln Val Ala Pro Gly Cys Gly Val Pro
 225 230 235 240
 Ile Val Asp Ser Tyr Tyr Ser Leu Leu Met Pro Ile Leu Thr Leu Thr
 245 250 255

SEQLIST-20480.TXT

Arg Ala Leu Ala Ala Glu Ser His Met Asp Ala Asp Leu Ala Lys Pro
260 265 270
Leu Ile Lys Trp Asp Leu Leu Lys Tyr Asp Phe Thr Glu Glu Arg Leu
275 280 285
Cys Leu Phe Asp Arg Tyr Phe Lys Tyr Trp Asp Gln Thr Tyr His Pro
290 295 300
Asn Cys Ile Asn Cys Leu Asp Asp Arg Cys Ile Leu His Cys Ala Asn
305 310 315 320
Phe Asn Val Leu Phe Ser Thr Val Phe Pro Pro Thr Ser Phe Gly Pro
325 330 335
Leu Val Arg Lys Ile Phe Val Asp Gly Val Pro Phe Val Val Ser Thr
340 345 350
Gly Tyr His Phe Arg Glu Leu Gly Val Val His Asn Gln Asp Val Asn
355 360 365
Leu His Ser Ser Arg Leu Ser Phe Lys Glu Leu Leu Val Tyr Ala Ala
370 375 380
Asp Pro Ala Met His Ala Ala Ser Gly Asn Leu Leu Leu Asp Lys Arg
385 390 395 400
Thr Thr Cys Phe Ser Val Ala Ala Leu Thr Asn Asn Val Ala Phe Gln
405 410 415
Thr Val Lys Pro Gly Asn Phe Asn Lys Asp Phe Tyr Asp Phe Ala Val
420 425 430
Ser Lys Gly Phe Phe Lys Glu Gly Ser Ser Val Glu Leu Lys His Phe
435 440 445
Phe Phe Ala Gln Asp Gly Asn Ala Ala Ile Ser Asp Tyr Asp Tyr Tyr
450 455 460
Arg Tyr Asn Leu Pro Thr Met Cys Asp Ile Arg Gln Leu Leu Phe Val
465 470 475 480
Val Glu Val Val Asp Lys Tyr Phe Asp Cys Tyr Asp Gly Gly Cys Ile
485 490 495
Asn Ala Asn Gln Val Ile Val Asn Asn Leu Asp Lys Ser Ala Gly Phe
500 505 510
Pro Phe Asn Lys Trp Gly Lys Ala Arg Leu Tyr Tyr Asp Ser Met Ser
515 520 525
Tyr Glu Asp Gln Asp Ala Leu Phe Ala Tyr Thr Lys Arg Asn Val Ile
530 535 540
Pro Thr Ile Thr Gln Met Asn Leu Lys Tyr Ala Ile Ser Ala Lys Asn
545 550 555 560
Arg Ala Arg Thr Val Ala Gly Val Ser Ile Cys Ser Thr Met Thr Asn
565 570 575
Arg Gln Phe His Gln Lys Leu Leu Lys Ser Ile Ala Ala Thr Arg Gly
580 585 590

SEQLIST-20480.TXT

Ala Thr Val Val Ile Gly Thr Ser Lys Phe Tyr Gly Gly Trp His Asn
595 600 605

Met Leu Lys Thr Val Tyr Ser Asp Val Glu Thr Pro His Leu Met Gly
610 615 620

Trp Asp Tyr Pro Lys Cys Asp Arg Ala Met Pro Asn Met Leu Arg Ile
625 630 635 640

Met Ala Ser Leu Val Leu Ala Arg Lys His Asn Thr Cys Cys Asn Leu
645 650 655

Ser His Arg Phe Tyr Arg Leu Ala Asn Glu Cys Ala Gln Val Leu Ser
660 665 670

Glu Met Val Met Cys Gly Gly Ser Leu Tyr Val Lys Pro Gly Gly Thr
675 680 685

Ser Ser Gly Asp Ala Thr Thr Ala Tyr Ala Asn Ser Val Phe Asn Ile
690 695 700

Cys Gln Ala Val Thr Ala Asn Val Asn Ala Leu Leu Ser Thr Asp Gly
705 710 715 720

Asn Lys Ile Ala Asp Lys Tyr Val Arg Asn Leu Gln His Arg Leu Tyr
725 730 735

Glu Cys Leu Tyr Arg Asn Arg Asp Val Asp His Glu Phe Val Asp Glu
740 745 750

Phe Tyr Ala Tyr Leu Arg Lys His Phe Ser Met Met Ile Leu Ser Asp
755 760 765

Asp Ala Val Val Cys Tyr Asn Ser Asn Tyr Ala Ala Gln Gly Leu Val
770 775 780

Ala Ser Ile Lys Asn Phe Lys Ala Val Leu Tyr Tyr Gln Asn Asn Val
785 790 795 800

Phe Met Ser Glu Ala Lys Cys Trp Thr Glu Thr Asp Leu Thr Lys Gly
805 810 815

Pro His Glu Phe Cys Ser Gln His Thr Met Leu Val Lys Gln Gly Asp
820 825 830

Asp Tyr Val Tyr Leu Pro Tyr Pro Asp Pro Ser Arg Ile Leu Gly Ala
835 840 845

Gly Cys Phe Val Asp Asp Ile Val Lys Thr Asp Gly Thr Leu Met Ile
850 855 860

Glu Arg Phe Val Ser Leu Ala Ile Asp Ala Tyr Pro Leu Thr Lys His
865 870 875 880

Pro Asn Gln Glu Tyr Ala Asp Val Phe His Leu Tyr Leu Gln Tyr Ile
885 890 895

Arg Lys Leu His Asp Glu Leu Thr Gly His Met Leu Asp Met Tyr Ser
900 905 910

Val Met Leu Thr Asn Asp Asn Thr Ser Arg Tyr Trp Glu Pro Glu Phe
915 920 925

SEQLIST-20480.TXT

Tyr Glu Ala Met Tyr Thr Pro His Thr Val Leu Gln Ala Val Gly Ala
 930 935 940
 Cys Val Leu Cys Asn Ser Gln Thr Ser Leu Arg Cys Gly Ala Cys Ile
 945 950 955 960
 Arg Arg Pro Phe Leu Cys Cys Lys Cys Cys Tyr Asp His Val Ile Ser
 965 970 975
 Thr Ser His Lys Leu Val Leu Ser Val Asn Pro Tyr Val Cys Asn Ala
 980 985 990
 Pro Gly Cys Asp Val Thr Asp Val Thr Gln Leu Tyr Leu Gly Gly Met
 995 1000 1005
 Ser Tyr Tyr Cys Lys Ser His Lys Pro Pro Ile Ser Phe Pro Leu Cys
 1010 1015 1020
 Ala Asn Gly Gln Val Phe Gly Leu Tyr Lys Asn Thr Cys Val Gly Ser
 1025 1030 1035 1040
 Asp Asn Val Thr Asp Phe Asn Ala Ile Ala Thr Cys Asp Trp Thr Asn
 1045 1050 1055
 Ala Gly Asp Tyr Ile Leu Ala Asn Thr Cys Thr Glu Arg Leu Lys Leu
 1060 1065 1070
 Phe Ala Ala Glu Thr Leu Lys Ala Thr Glu Glu Thr Phe Lys Leu Ser
 1075 1080 1085
 Tyr Gly Ile Ala Thr Val Arg Glu Val Leu Ser Asp Arg Glu Leu His
 1090 1095 1100
 Leu Ser Trp Glu Val Gly Lys Pro Arg Pro Pro Leu Asn Arg Asn Tyr
 1105 1110 1115 1120
 Val Phe Thr Gly Tyr Arg Val Thr Lys Asn Ser Lys Val Gln Ile Gly
 1125 1130 1135
 Glu Tyr Thr Phe Glu Lys Gly Asp Tyr Gly Asp Ala Val Val Tyr Arg
 1140 1145 1150
 Gly Thr Thr Thr Tyr Lys Leu Asn Val Gly Asp Tyr Phe Val Leu Thr
 1155 1160 1165
 Ser His Thr Val Met Pro Leu Ser Ala Pro Thr Leu Val Pro Gln Glu
 1170 1175 1180
 His Tyr Val Arg Ile Thr Gly Leu Tyr Pro Thr Leu Asn Ile Ser Asp
 1185 1190 1195 1200
 Glu Phe Ser Ser Asn Val Ala Asn Tyr Gln Lys Val Gly Met Gln Lys
 1205 1210 1215
 Tyr Ser Thr Leu Gln Gly Pro Pro Gly Thr Gly Lys Ser His Phe Ala
 1220 1225 1230
 Ile Gly Leu Ala Leu Tyr Tyr Pro Ser Ala Arg Ile Val Tyr Thr Ala
 1235 1240 1245
 Cys Ser His Ala Ala Val Asp Ala Leu Cys Glu Lys Ala Leu Lys Tyr
 1250 1255 1260

SEQLIST-20480.TXT

Leu Pro Ile Asp Lys Cys Ser Arg Ile Ile Pro Ala Arg Ala Arg Val
 1265 1270 1275 1280
 Glu Cys Phe Asp Lys Phe Lys Val Asn Ser Thr Leu Glu Gln Tyr Val
 1285 1290 1295
 Phe Cys Thr Val Asn Ala Leu Pro Glu Thr Thr Ala Asp Ile Val Val
 1300 1305 1310
 Phe Asp Glu Ile Ser Met Ala Thr Asn Tyr Asp Leu Ser Val Val Asn
 1315 1320 1325
 Ala Arg Leu Arg Ala Lys His Tyr Val Tyr Ile Gly Asp Pro Ala Gln
 1330 1335 1340
 Leu Pro Ala Pro Arg Thr Leu Leu Thr Lys Gly Thr Leu Glu Pro Glu
 1345 1350 1355 1360
 Tyr Phe Asn Ser Val Cys Arg Leu Met Lys Thr Ile Gly Pro Asp Met
 1365 1370 1375
 Phe Leu Gly Thr Cys Arg Arg Cys Pro Ala Glu Ile Val Asp Thr Val
 1380 1385 1390
 Ser Ala Leu Val Tyr Asp Asn Lys Leu Lys Ala His Lys Asp Lys Ser
 1395 1400 1405
 Ala Gln Cys Phe Lys Met Phe Tyr Lys Gly Val Ile Thr His Asp Val
 1410 1415 1420
 Ser Ser Ala Ile Asn Arg Pro Gln Ile Gly Val Val Arg Glu Phe Leu
 1425 1430 1435 1440
 Thr Arg Asn Pro Ala Trp Arg Lys Ala Val Phe Ile Ser Pro Tyr Asn
 1445 1450 1455
 Ser Gln Asn Ala Val Ala Ser Lys Ile Leu Gly Leu Pro Thr Gln Thr
 1460 1465 1470
 Val Asp Ser Ser Gln Gly Ser Glu Tyr Asp Tyr Val Ile Phe Thr Gln
 1475 1480 1485
 Thr Thr Glu Thr Ala His Ser Cys Asn Val Asn Arg Phe Asn Val Ala
 1490 1495 1500
 Ile Thr Arg Ala Lys Ile Gly Ile Leu Cys Ile Met Ser Asp Arg Asp
 1505 1510 1515 1520
 Leu Tyr Asp Lys Leu Gln Phe Thr Ser Leu Glu Ile Pro Arg Arg Asn
 1525 1530 1535
 Val Ala Thr Leu Gln Ala Glu Asn Val Thr Gly Leu Phe Lys Asp Cys
 1540 1545 1550
 Ser Lys Ile Ile Thr Gly Leu His Pro Thr Gln Ala Pro Thr His Leu
 1555 1560 1565
 Ser Val Asp Ile Lys Phe Lys Thr Glu Gly Leu Cys Val Asp Ile Pro
 1570 1575 1580
 Gly Ile Pro Lys Asp Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly
 1585 1590 1595 1600

SEQLIST-20480.TXT

Phe Lys Met Asn Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr
 1605 1610 1615
 Arg Glu Glu Ala Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val
 1620 1625 1630
 Glu Gly Cys His Ala Thr Arg Asp Ala Val Gly Thr Asn Leu Pro Leu
 1635 1640 1645
 Gln Leu Gly Phe Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly
 1650 1655 1660
 Tyr Val Asp Thr Glu Asn Asn Thr Glu Phe Thr Arg Val Asn Ala Lys
 1665 1670 1675 1680
 Pro Pro Pro Gly Asp Gln Phe Lys His Leu Ile Pro Leu Met Tyr Lys
 1685 1690 1695
 Gly Leu Pro Trp Asn Val Val Arg Ile Lys Ile Val Gln Met Leu Ser
 1700 1705 1710
 Asp Thr Leu Lys Gly Leu Ser Asp Arg Val Val Phe Val Leu Trp Ala
 1715 1720 1725
 His Gly Phe Glu Leu Thr Ser Met Lys Tyr Phe Val Lys Ile Gly Pro
 1730 1735 1740
 Glu Arg Thr Cys Cys Leu Cys Asp Lys Arg Ala Thr Cys Phe Ser Thr
 1745 1750 1755 1760
 Ser Ser Asp Thr Tyr Ala Cys Trp Asn His Ser Val Gly Phe Asp Tyr
 1765 1770 1775
 Val Tyr Asn Pro Phe Met Ile Asp Val Gln Gln Trp Gly Phe Thr Gly
 1780 1785 1790
 Asn Leu Gln Ser Asn His Asp Gln His Cys Gln Val His Gly Asn Ala
 1795 1800 1805
 His Val Ala Ser Cys Asp Ala Ile Met Thr Arg Cys Leu Ala Val His
 1810 1815 1820
 Glu Cys Phe Val Lys Arg Val Asp Trp Ser Val Glu Tyr Pro Ile Ile
 1825 1830 1835 1840
 Gly Asp Glu Leu Arg Val Asn Ser Ala Cys Arg Lys Val Gln His Met
 1845 1850 1855
 Val Val Lys Ser Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp
 1860 1865 1870
 Ile Gly Asn Pro Lys Ala Ile Lys Cys Val Pro Gln Ala Glu Val Glu
 1875 1880 1885
 Trp Lys Phe Tyr Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile
 1890 1895 1900
 Glu Glu Leu Phe Tyr Ser Tyr Ala Thr His His Asp Lys Phe Thr Asp
 1905 1910 1915 1920
 Gly Val Cys Leu Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro Ala Asn
 1925 1930 1935

SEQLIST-20480.TXT

Ala Ile Val Cys Arg Phe Asp Thr Arg Val Leu Ser Asn Leu Asn Leu
1940 1945 1950

Pro Gly Cys Asp Gly Gly Ser Leu Tyr Val Asn Lys His Ala Phe His
1955 1960 1965

Thr Pro Ala Phe Asp Lys Ser Ala Phe Thr Asn Leu Lys Gln Leu Pro
1970 1975 1980

Phe Phe Tyr Tyr Ser Asp Ser Pro Cys Glu Ser His Gly Lys Gln Val
1985 1990 1995 2000

Val Ser Asp Ile Asp Tyr Val Pro Leu Lys Ser Ala Thr Cys Ile Thr
2005 2010 2015

Arg Cys Asn Leu Gly Gly Ala Val Cys Arg His His Ala Asn Glu Tyr
2020 2025 2030

Arg Gln Tyr Leu Asp Ala Tyr Asn Met Met Ile Ser Ala Gly Phe Ser
2035 2040 2045

Leu Trp Ile Tyr Lys Gln Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe
2050 2055 2060

Thr Arg Leu Gln Ser Leu Glu Asn Val Ala Tyr Asn Val Val Asn Lys
2065 2070 2075 2080

Gly His Phe Asp Gly His Ala Gly Glu Ala Pro Val Ser Ile Ile Asn
2085 2090 2095

Asn Ala Val Tyr Thr Lys Val Asp Gly Ile Asp Val Glu Ile Phe Glu
2100 2105 2110

Asn Lys Thr Thr Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys
2115 2120 2125

Arg Asn Ile Lys Pro Val Pro Glu Ile Lys Ile Leu Asn Asn Leu Gly
2130 2135 2140

Val Asp Ile Ala Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Glu Ala
2145 2150 2155 2160

Pro Ala His Val Ser Thr Ile Gly Val Cys Thr Met Thr Asp Ile Ala
2165 2170 2175

Lys Lys Pro Thr Glu Ser Ala Cys Ser Ser Leu Thr Val Leu Phe Asp
2180 2185 2190

Gly Arg Val Glu Gly Gln Val Asp Leu Phe Arg Asn Ala Arg Asn Gly
2195 2200 2205

Val Leu Ile Thr Glu Gly Ser Val Lys Gly Leu Thr Pro Ser Lys Gly
2210 2215 2220

Pro Ala Gln Ala Ser Val Asn Gly Val Thr Leu Ile Gly Glu Ser Val
2225 2230 2235 2240

Lys Thr Gln Phe Asn Tyr Phe Lys Lys Val Asp Gly Ile Ile Gln Gln
2245 2250 2255

Leu Pro Glu Thr Tyr Phe Thr Gln Ser Arg Asp Leu Glu Asp Phe Lys
2260 2265 2270

SEQLIST-20480.TXT

Pro Arg Ser Gln Met Glu Thr Asp Phe Leu Glu Leu Ala Met Asp Glu
2275 2280 2285

Phe Ile Gln Arg Tyr Lys Leu Glu Gly Tyr Ala Phe Glu His Ile Val
2290 2295 2300

Tyr Gly Asp Phe Ser His Gly Gln Leu Gly Gly Leu His Leu Met Ile
2305 2310 2315 2320

Gly Leu Ala Lys Arg Ser Gln Asp Ser Pro Leu Lys Leu Glu Asp Phe
2325 2330 2335

Ile Pro Met Asp Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln
2340 2345 2350

Thr Gly Ser Ser Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp
2355 2360 2365

Asp Phe Val Glu Ile Ile Lys Ser Gln Asp Leu Ser Val Ile Ser Lys
2370 2375 2380

Val Val Lys Val Thr Ile Asp Tyr Ala Glu Ile Ser Phe Met Leu Trp
2385 2390 2395 2400

Cys Lys Asp Gly His Val Glu Thr Phe Tyr Pro Lys Leu Gln Ala Ser
2405 2410 2415

Arg Ala Trp Gln Pro Gly Val Ala Met Pro Asn Leu Tyr Lys Met Gln
2420 2425 2430

Arg Met Leu Leu Glu Lys Cys Asp Leu Gln Asn Tyr Gly Glu Asn Ala
2435 2440 2445

Val Ile Pro Lys Gly Ile Met Met Asn Val Ala Lys Tyr Thr Gln Leu
2450 2455 2460

Cys Gln Tyr Leu Asn Thr Leu Thr Leu Ala Val Pro Tyr Asn Met Arg
2465 2470 2475 2480

Val Ile His Phe Gly Ala Gly Ser Asp Lys Gly Val Ala Pro Gly Thr
2485 2490 2495

Ala Val Leu Arg Gln Trp Leu Pro Thr Gly Thr Leu Leu Val Asp Ser
2500 2505 2510

Asp Leu Asn Asp Phe Val Ser Asp Ala Tyr Ser Thr Leu Ile Gly Asp
2515 2520 2525

Cys Ala Thr Val His Thr Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp
2530 2535 2540

Met Tyr Asp Pro Arg Thr Lys His Val Thr Lys Glu Asn Asp Ser Lys
2545 2550 2555 2560

Glu Gly Phe Phe Thr Tyr Leu Cys Gly Phe Ile Lys Gln Lys Leu Ala
2565 2570 2575

Leu Gly Gly Ser Ile Ala Val Lys Ile Thr Glu His Ser Trp Asn Ala
2580 2585 2590

Asp Leu Tyr Lys Leu Met Gly His Phe Ser Trp Trp Thr Ala Phe Val
2595 2600 2605

SEQLIST-20480.TXT

Thr Asn Val Asn Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Ala Asn
 2610 2615 2620
 Tyr Leu Gly Lys Pro Lys Glu Gln Ile Asp Gly Tyr Thr Met His Ala
 2625 2630 2635 2640
 Asn Tyr Ile Phe Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser Ser Tyr
 2645 2650 2655
 Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys Leu Arg Gly Thr Ala
 2660 2665 2670
 Val Met Ser Leu Lys Glu Asn Gln Ile Asn Asp Met Ile Tyr Ser Leu
 2675 2680 2685
 Leu Glu Lys Gly Arg Leu Ile Ile Arg Glu Asn Asn Arg Val Val Val
 2690 2695 2700
 Ser Ser Asp Ile Leu Val Asn Asn
 2705 2710
 <210> 7189
 <211> 1257
 <212> PRT
 <213> SARS coronavirus
 <400> 7189
 Thr Asn Met Phe Ile Phe Leu Leu Phe Leu Thr Leu Thr Ser Gly Ser
 1 5 10 15
 Asp Leu Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr
 20 25 30
 Thr Gln His Thr Ser Ser Met Arg Gly Val Tyr Tyr Pro Asp Glu Ile
 35 40 45
 Phe Arg Ser Asp Thr Leu Tyr Leu Thr Gln Asp Leu Phe Leu Pro Phe
 50 55 60
 Tyr Ser Asn Val Thr Gly Phe His Thr Ile Asn His Thr Phe Gly Asn
 65 70 75 80
 Pro Val Ile Pro Phe Lys Asp Gly Ile Tyr Phe Ala Ala Thr Glu Lys
 85 90 95
 Ser Asn Val Val Arg Gly Trp Val Phe Gly Ser Thr Met Asn Asn Lys
 100 105 110
 Ser Gln Ser Val Ile Ile Ile Asn Asn Ser Thr Asn Val Val Ile Arg
 115 120 125
 Ala Cys Asn Phe Glu Leu Cys Asp Asn Pro Phe Phe Ala Val Ser Lys
 130 135 140
 Pro Met Gly Thr Gln Thr His Thr Met Ile Phe Asp Asn Ala Phe Asn
 145 150 155 160
 Cys Thr Phe Glu Tyr Ile Ser Asp Ala Phe Ser Leu Asp Val Ser Glu
 165 170 175
 Lys Ser Gly Asn Phe Lys His Leu Arg Glu Phe Val Phe Lys Asn Lys
 180 185 190

SEQLIST-20480.TXT

Asp Gly Phe Leu Tyr Val Tyr Lys Gly Tyr Gln Pro Ile Asp Val Val
195 200 205

Arg Asp Leu Pro Ser Gly Phe Asn Thr Leu Lys Pro Ile Phe Lys Leu
210 215 220

Pro Leu Gly Ile Asn Ile Thr Asn Phe Arg Ala Ile Leu Thr Ala Phe
225 230 235 240

Ser Pro Ala Gln Asp Ile Trp Gly Thr Ser Ala Ala Ala Tyr Phe Val
245 250 255

Gly Tyr Leu Lys Pro Thr Thr Phe Met Leu Lys Tyr Asp Glu Asn Gly
260 265 270

Thr Ile Thr Asp Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu
275 280 285

Lys Cys Ser Val Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr
290 295 300

Ser Asn Phe Arg Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn
305 310 315 320

Ile Thr Asn Leu Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Lys Phe
325 330 335

Pro Ser Val Tyr Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala
340 345 350

Asp Tyr Ser Val Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys
355 360 365

Tyr Gly Val Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val
370 375 380

Tyr Ala Asp Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala
385 390 395 400

Pro Gly Gln Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp
405 410 415

Asp Phe Met Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala
420 425 430

Thr Ser Thr Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly
435 440 445

Lys Leu Arg Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro
450 455 460

Asp Gly Lys Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu
465 470 475 480

Asn Asp Tyr Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr
485 490 495

Arg Val Val Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val
500 505 510

Cys Gly Pro Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn
515 520 525

SEQLIST-20480.TXT

Phe Asn Phe Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser
 530 535 540
 Lys Arg Phe Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe
 545 550 555 560
 Thr Asp Ser Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser
 565 570 575
 Pro Cys Ala Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala
 580 585 590
 Ser Ser Glu Val Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val
 595 600 605
 Ser Thr Ala Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr
 610 615 620
 Ser Thr Gly Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly
 625 630 635 640
 Ala Glu His Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala
 645 650 655
 Gly Ile Cys Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser
 660 665 670
 Gln Lys Ser Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser
 675 680 685
 Ile Ala Tyr Ser Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile
 690 695 700
 Ser Ile Thr Thr Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val
 705 710 715 720
 Asp Cys Asn Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu
 725 730 735
 Leu Leu Gln Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser
 740 745 750
 Gly Ile Ala Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln
 755 760 765
 Val Lys Gln Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe
 770 775 780
 Asn Phe Ser Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser
 785 790 795 800
 Phe Ile Glu Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly
 805 810 815
 Phe Met Lys Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp
 820 825 830
 Leu Ile Cys Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu
 835 840 845
 Leu Thr Asp Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly
 850 855 860

SEQLIST-20480.TXT

Thr Ala Thr Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile
 865 870 875 880
 Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr
 885 890 895
 Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
 900 905 910
 Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
 915 920 925
 Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn
 930 935 940
 Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val
 945 950 955 960
 Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
 965 970 975
 Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
 980 985 990
 Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu
 995 1000 1005
 Ala Ala Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val
 1010 1015 1020
 Asp Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala
 1025 1030 1035 1040
 Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu
 1045 1050 1055
 Arg Asn Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr
 1060 1065 1070
 Phe Pro Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile
 1075 1080 1085
 Thr Gln Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr
 1090 1095 1100
 Phe Val Ser Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr
 1105 1110 1115 1120
 Val Tyr Asp Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu
 1125 1130 1135
 Asp Lys Tyr Phe Lys Asn His Thr Ser Pro Asp Val Asp Leu Gly Asp
 1140 1145 1150
 Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1155 1160 1165
 Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 1170 1175 1180
 Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val
 1185 1190 1195 1200

SEQLIST-20480.TXT

Trp Leu Gly Phe Ile Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile
1205 1210 1215

Leu Leu Cys Cys Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys
1220 1225 1230

Ser Cys Gly Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val
1235 1240 1245

Leu Lys Gly Val Lys Leu His Tyr Thr
1250 1255

<210> 7190
<211> 1125
<212> PRT
<213> SARS coronavirus

<400> 7190
Lys Asp Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly Phe Lys Met
1 5 10 15

Asn Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr Arg Glu Glu
20 25 30

Ala Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val Glu Gly Cys
35 40 45

His Ala Thr Arg Asp Ala Val Gly Thr Asn Leu Pro Leu Gln Leu Gly
50 55 60

Phe Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly Tyr Val Asp
65 70 75 80

Thr Glu Asn Asn Thr Glu Phe Thr Arg Val Asn Ala Lys Pro Pro Pro
85 90 95

Gly Asp Gln Phe Lys His Leu Ile Pro Leu Met Tyr Lys Gly Leu Pro
100 105 110

Trp Asn Val Val Arg Ile Lys Ile Val Gln Met Leu Ser Asp Thr Leu
115 120 125

Lys Gly Leu Ser Asp Arg Val Val Phe Val Leu Trp Ala His Gly Phe
130 135 140

Glu Leu Thr Ser Met Lys Tyr Phe Val Lys Ile Gly Pro Glu Arg Thr
145 150 155 160

Cys Cys Leu Cys Asp Lys Arg Ala Thr Cys Phe Ser Thr Ser Ser Asp
165 170 175

Thr Tyr Ala Cys Trp Asn His Ser Val Gly Phe Asp Tyr Val Tyr Asn
180 185 190

Pro Phe Met Ile Asp Val Gln Gln Trp Gly Phe Thr Gly Asn Leu Gln
195 200 205

Ser Asn His Asp Gln His Cys Gln Val His Gly Asn Ala His Val Ala
210 215 220

Ser Cys Asp Ala Ile Met Thr Arg Cys Leu Ala Val His Glu Cys Phe
225 230 235 240

SEQLIST-20480.TXT

Val Lys Arg Val Asp Trp Ser Val Glu Tyr Pro Ile Ile Gly Asp Glu
245 250 255
Leu Arg Val Asn Ser Ala Cys Arg Lys Val Gln His Met Val Val Lys
260 270
Ser Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp Ile Gly Asn
275 280 285
Pro Lys Ala Ile Lys Cys Val Pro Gln Ala Glu Val Glu Trp Lys Phe
290 300
Tyr Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile Glu Glu Leu
305 310 315 320
Phe Tyr Ser Tyr Ala Ile His His Asp Lys Phe Thr Asp Gly Val Cys
325 330 335
Leu Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro Ala Asn Ala Ile Val
340 345 350
Cys Arg Phe Asp Thr Arg Val Leu Ser Asn Leu Asn Leu Pro Gly Cys
355 360 365
Asp Gly Gly Ser Leu Tyr Val Asn Lys His Ala Phe His Thr Pro Ala
370 375 380
Phe Asp Lys Ser Ala Phe Thr Asn Leu Lys Gln Leu Pro Phe Phe Tyr
385 390 395 400
Tyr Ser Asp Ser Pro Cys Glu Ser His Gly Lys Gln Val Val Ser Asp
405 410 415
Ile Asp Tyr Val Pro Leu Lys Ser Ala Thr Cys Ile Thr Arg Cys Asn
420 425 430
Leu Gly Gly Ala Val Cys Arg His His Ala Asn Glu Tyr Arg Gln Tyr
435 440 445
Leu Asp Ala Tyr Asn Met Met Ile Ser Ala Gly Phe Ser Leu Trp Ile
450 455 460
Tyr Lys Gln Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe Thr Arg Leu
465 470 475 480
Gln Ser Leu Glu Asn Val Ala Tyr Asn Val Val Asn Lys Gly His Phe
485 490 495
Asp Gly His Ala Gly Glu Ala Pro Val Ser Ile Ile Asn Asn Ala Val
500 505 510
Tyr Thr Lys Val Asp Gly Ile Asp Val Glu Ile Phe Glu Asn Lys Thr
515 520 525
Thr Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys Arg Asn Ile
530 535 540
Lys Pro Val Pro Glu Ile Lys Ile Leu Asn Asn Leu Gly Val Asp Ile
545 550 555 560
Ala Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Glu Ala Pro Ala His
565 570 575

SEQLIST-20480.TXT

Val Ser Thr Ile Gly Val Cys Thr Met Thr Asp Ile Ala Lys Lys Pro
 580 585 590
 Thr Glu Ser Ala Cys Ser Ser Leu Thr Val Leu Phe Asp Gly Arg Val
 595 600 605
 Glu Gly Gln Val Asp Leu Phe Arg Asn Ala Arg Asn Gly Val Leu Ile
 610 615 620
 Thr Glu Gly Ser Val Lys Gly Leu Thr Pro Ser Lys Gly Pro Ala Gln
 625 630 635 640
 Ala Ser Val Asn Gly Val Thr Leu Ile Gly Glu Ser Val Lys Thr Gln
 645 650 655
 Phe Asn Tyr Phe Lys Lys Val Asp Gly Ile Ile Gln Gln Leu Pro Glu
 660 665 670
 Thr Tyr Phe Thr Gln Ser Arg Asp Leu Glu Asp Phe Lys Pro Arg Ser
 675 680 685
 Gln Met Glu Thr Asp Phe Leu Glu Leu Ala Met Asp Glu Phe Ile Gln
 690 695 700
 Arg Tyr Lys Leu Glu Gly Tyr Ala Phe Glu His Ile Val Tyr Gly Asp
 705 710 715 720
 Phe Ser His Gly Gln Leu Gly Gly Leu His Leu Met Ile Gly Leu Ala
 725 730 735
 Lys Arg Ser Gln Asp Ser Pro Leu Lys Leu Glu Asp Phe Ile Pro Met
 740 745 750
 Asp Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln Thr Gly Ser
 755 760 765
 Ser Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp Asp Phe Val
 770 775 780
 Glu Ile Ile Lys Ser Gln Asp Leu Ser Val Ile Ser Lys Val Val Lys
 785 790 795 800
 Val Thr Ile Asp Tyr Ala Glu Ile Ser Phe Met Leu Trp Cys Lys Asp
 805 810 815
 Gly His Val Glu Thr Phe Tyr Pro Lys Leu Gln Ala Ser Gln Ala Trp
 820 825 830
 Gln Pro Gly Val Ala Met Pro Asn Leu Tyr Lys Met Gln Arg Met Leu
 835 840 845
 Leu Glu Lys Cys Asp Leu Gln Asn Tyr Gly Glu Asn Ala Val Ile Pro
 850 855 860
 Lys Gly Ile Met Met Asn Val Ala Lys Tyr Thr Gln Leu Cys Gln Tyr
 865 870 875 880
 Leu Asn Thr Leu Thr Leu Ala Val Pro Tyr Asn Met Arg Val Ile His
 885 890 895
 Phe Gly Ala Gly Ser Asp Lys Gly Val Ala Pro Gly Thr Ala Val Leu
 900 905 910

SEQLIST-20480.TXT

Arg Gln Trp Leu Pro Thr Gly Thr Leu Leu Val Asp Ser Asp Leu Asn
 915 920
 Asp Phe Val Ser Asp Ala Asp Ser Thr Leu Ile Gly Asp Cys Ala Thr
 930 935 940
 Val His Thr Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp Met Tyr Asp
 945 950 955 960
 Pro Arg Thr Lys His Val Thr Lys Glu Asn Asp Ser Lys Glu Gly Phe
 965 970 975
 Phe Thr Tyr Leu Cys Gly Phe Ile Lys Gln Lys Leu Ala Leu Gly Gly
 980 985 990
 Ser Ile Ala Val Lys Ile Thr Glu His Ser Trp Asn Ala Asp Leu Tyr
 995 1000 1005
 Lys Leu Met Gly His Phe Ser Trp Trp Thr Ala Phe Val Thr Asn Val
 1010 1015 1020
 Asn Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Ala Asn Tyr Leu Gly
 1025 1030 1035 1040
 Lys Pro Lys Glu Gln Ile Asp Gly Tyr Thr Met His Ala Asn Tyr Ile
 1045 1050 1055
 Phe Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser Ser Tyr Ser Leu Phe
 1060 1065 1070
 Asp Met Ser Lys Phe Pro Leu Lys Leu Arg Gly Thr Ala Val Met Ser
 1075 1080 1085
 Leu Lys Glu Asn Gln Ile Asn Asp Met Ile Tyr Ser Leu Leu Glu Lys
 1090 1095 1100
 Gly Arg Leu Ile Ile Arg Glu Asn Asn Arg Val Val Val Ser Ser Asp
 1105 1110 1115 1120
 Ile Leu Val Asn Asn
 1125

<210> 7191
 <211> 3378
 <212> DNA
 <213> SARS coronavirus

<400> 7191
 aaggacatga cctaccgtag actcatctct atgatgggtt tcaaaatgaa ttaccaagtc 60
 aatgggtacc ctaatatgtt tatcacccgc gaagaagcta ttcgtcacgt tcgtgcgtgg 120
 attggctttg atgtagaggg ctgtcatgca actagagatg ctgtgggtac taacctacct 180
 ctccagctag gattttctac aggtgttaac ttagtagctg taccgactgg ttatgttgac 240
 actgaaaata acacagaatt caccagagtt aatgcaaaac ctccaccagg tgaccagttt 300
 aaacatctta taccactcat gtataaaggc ttgccctgga atgtagtgcg tattaagata 360
 gtacaaatgc tcagtgtatc actgaaagga ttgtcagaca gagtcgtgtt cgtcctttgg 420
 gcgcattggt ttgagcttac atcaatgaag tactttgtca agattggacc tgaaagaacg 480
 tgttgtctgt gtgacaaacg tgcaacttgc ttttctactt catcagatac ttatgcctgc 540
 tggaatcatt ctgtgggttt tgactatgtc tataacccat ttatgattga tgttcagcag 600
 tggggcttta cgggtaacct tcagagtaac catgaccaac attgccagg acatggaaat 660
 gcacatgtgg ctagtgtgtg tgctatcatg actagatgtt tagcagtgca tgagtgttt 720
 gttgaagcgc ttgattggct tgttgaatac cctattatag gagatgaact gaggggtaat 780
 tctgcttgca gaaaagtaca acacatgggt gtgaagtctg cattgcttgc tgataagttt 840
 ccagttcttc atgacatagg aaatccaaag gctatcaagt gtgtgcctca ggctgaagta 900

SEQLIST-20480.TXT

gaatggaagt	tctacgatgc	tcagccatgt	agtgacaaag	cttacaaaat	agaggaactc	960
ttctattctt	atgctataca	tcacgataaa	ttcactgatg	gtgtttgttt	gttttggaat	1020
tgtaacgttg	atcgttaccc	agccaatgca	attgtgtgta	ggtttgacac	aagagtcctg	1080
tcaaacttga	acttaccagg	ctgtgatggg	ggtagtttgt	atgtgaataa	gcatgcattc	1140
cacactccag	ctttcgataa	aagtgcattt	actaatttaa	agcaattgcc	tttcttttac	1200
tattctgata	gtccttgtga	gtctcatggc	aaacaagtag	tgctcgatat	tgattatggt	1260
ccactcaa	ctgctacgtg	tattacacga	tgcaatttag	gtgggtgctg	ttgcagacac	1320
catgcaa	agtaccgaca	gtacttggat	gcatataata	tgatgatctt	tgctggattt	1380
agcctatgga	tttaaccagt	atttgatact	tataacctgt	ggaatacatt	taccaggtta	1440
cagagtttag	aaaatgtggc	ttataatggt	gttaataaag	gacactttga	tggaacagcc	1500
ggcgaagcac	ctgtttccat	cattaataat	gctgtttaca	caaaggtaga	tggtattgat	1560
gtggagatct	ttgaaaataa	gacaacactt	cctgttaatg	ttgcatttga	gctttgggct	1620
aagcgttaaca	tttaaccagt	gccagagatt	aaagataact	ataatttggg	tggtgatata	1680
gctgctaata	ctgtaatctg	ggactacaaa	agagaagccc	cagcacatgt	atctacaata	1740
gggtgtctgca	caatgactga	cattgccaa	aaacctactg	agagtgcctg	ttcttcactt	1800
actgtcttgt	ttgatggtag	agtggaaagg	caggtagacc	tttttagaaa	cgcccgta	1860
gggtgtttgt	taacagaagg	ttcagtcaaa	ggcttaacac	cttcaaaggg	accagcaca	1920
gctagcgtca	atggagtgga	attaatttga	gaatcagtaa	aaacacagtt	taactacttt	1980
aagaaagtag	acggcattat	tcaacagtgt	cctgaaacct	actttactca	gagcagagac	2040
ttagaggatt	ttaagcccag	atcacaaatg	gaaactgact	ttctcgagct	cgctatggat	2100
gaattcatac	agcgataata	gctcgagggc	tatgccttcg	aacacatcgt	ttatggagat	2160
ttcagtcag	gacaacttgg	cggctctcat	ttaatgatag	gcttagccaa	gcgctcaca	2220
gattcaccac	ttaaattaga	ggattttatc	cctatggaca	gcacagtga	aaattacttc	2280
ataacagatg	cgcaaacagg	ttcatcaaaa	tggtgtgtgt	ctgtgattga	tcttttactt	2340
gatgactttg	tcgagataat	aaagtcacaa	gatttgtcag	tgatttcaaa	agtgggtcaag	2400
gttacaaattg	actatgctga	aatttcattc	atgcttttgt	gtaaggatgg	acatgttgaa	2460
accttctacc	caaaactaca	agcaagtcaa	gcgtggcaac	cagggtgttg	gatgccta	2520
ttgtacaaga	tgcaagaat	gcttcttgaa	aagtgtgacc	ttcagaatta	tggtgaaa	2580
gctgtttatac	caaaaggaat	aatgatgaat	gtcgcgaagt	atactcaact	gtgtcaatac	2640
ttaaatacac	ttacttttag	tgtaccctac	aacatgagag	ttattcactt	tggtgctggc	2700
tctgataaag	gagttgcacc	aggtacagct	gtgctcagac	aatgggtgcc	aactggcaca	2760
ctacttgtcg	attcagatct	taatgacttc	gtctccgacg	cagattctac	tttaattgga	2820
gactgtgcaa	cagtacatac	ggctaataaa	tgggacctta	ttattagcga	tatgtatgac	2880
cctaggacca	aacatgtgac	aaaagagaat	gactctaaag	aagggttttt	cacttatctg	2940
tgtggattta	taaagcaaaa	actagccctg	gggtgttcta	tagctgtaaa	gataacagag	3000
cattcttggg	atgctgacct	ttacaagctt	atggggccatt	tctcatgggtg	gacagctttt	3060
gttacaaatg	taaatgcac	atcatcgga	gcatttttaa	ttggggctaa	ctatcttggc	3120
aagccgaagg	aacaaattga	tggtctatac	actcatgcta	actacatttt	ctggaggga	3180
acaaatccta	tccagttgtc	ttcctattca	ctctttgaca	tgagcaaat	tccctttaa	3240
ttaagaggaa	ctgctgtaat	gtctcttaag	gagaatcaaa	tcaatgat	gatttattct	3300
cttctggaaa	aaggtaggct	tatcattaga	gaaaacaaca	gagttgtggt	ttcaagtgat	3360
attcttgtta	acaactaa					3378

<210> 7192
 <211> 127
 <212> PRT
 <213> SARS coronavirus

<400> 7192
 Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr
 1 5 10 15
 Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
 20 25 30
 Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
 35 40 45
 Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn
 50 55 60
 Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val
 65 70 75 80

SEQLIST-20480.TXT

Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
85 90 95

Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
100 105 110

Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn
115 120 125

<210> 7193

<211> 102

<212> PRT

<213> SARS coronavirus

<400> 7193

Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr
1 5 10 15

Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
20 25 30

Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
35 40 45

Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn
50 55 60

Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val
65 70 75 80

Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
85 90 95

Ile Asp Arg Leu Ile Thr
100

<210> 7194

<211> 105

<212> PRT

<213> SARS coronavirus

<400> 7194

Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile
1 5 10 15

Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp
20 25 30

Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln Leu
35 40 45

Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu Ser
50 55 60

Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile Thr
65 70 75 80

Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu Ile Arg
85 90 95

Ala Ala Glu Ile Arg Ala Ser Ala Asn
100 105

SEQLIST-20480.TXT

<210> 7195
 <211> 58
 <212> PRT
 <213> SARS coronavirus

<400> 7195
 Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val Val
 1 5 10 15
 Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu
 20 25 30
 Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu Gly Lys Tyr Glu Gln Tyr
 35 40 45
 Ile Lys Trp Pro Trp Tyr Val Trp Leu Gly
 50 55

<210> 7196
 <211> 52
 <212> PRT
 <213> SARS coronavirus

<400> 7196
 Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val Val
 1 5 10 15
 Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu
 20 25 30
 Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu Gly Lys Tyr Glu Gln Tyr
 35 40 45
 Ile Lys Trp Pro
 50

<210> 7197
 <211> 19
 <212> PRT
 <213> SARS coronavirus

<400> 7197
 Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile Gln Glu
 1 5 10 15
 Ser Leu Thr

<210> 7198
 <211> 17
 <212> PRT
 <213> SARS coronavirus

<400> 7198
 His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly Val Val Phe Leu
 1 5 10 15
 His

<210> 7199
 <211> 20

SEQLIST-20480.TXT

```

<212>    PRT
<213>    SARS coronavirus

<400>    7199
Ala Ala Leu Val Ser Gly Thr Ala Thr Ala Gly Trp Thr Phe Gly Ala
1          5          10          15

Gly Ala Ala Leu
                20

<210>    7200
<211>    513
<212>    PRT
<213>    Artificial Sequence

<220>
<223>    Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400>    7200
Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
1          5          10          15

Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Pro Phe Ala
                20          25          30

Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
35          40          45

Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
50          55          60

Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
65          70          75          80

Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
85          90          95

Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
100         105         110

Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
115         120         125

Leu Ile Thr Gly Gly Gly Gly Gly Gly Pro Asp Val Asp Phe Gly Asp
130         135         140

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
145         150         155         160

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
165         170         175

Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Gly Gly Gly
180         185         190

Gly Ser Gly Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn
195         200         205

Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu
210         215         220

Lys Leu Thr Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr
225         230         235         240

```

SEQLIST-20480.TXT

Asp Ala Ala Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu
 245 250 255
 Asn Ile Thr Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile
 260 265 270
 Asp Glu Lys Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu
 275 280 285
 Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala
 290 295 300
 Asp Glu Ala Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu
 305 310 315 320
 Thr Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala
 325 330 335
 Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys
 340 345 350
 Ala Glu Ala Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala
 355 360 365
 Thr Asn Lys Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr
 370 375 380
 Thr Arg Glu Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn
 385 390 395 400
 Ala Thr Thr Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser
 405 410 415
 Ile Ala Asp His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser
 420 425 430
 Asp Leu Arg Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu
 435 440 445
 Ser Gly Leu Phe Gln Pro Tyr Asn Val Gly Arg Phe Asn Val Thr Ala
 450 455 460
 Ala Val Gly Gly Tyr Lys Ser Glu Ser Ala Val Ala Ile Gly Thr Gly
 465 470 475 480
 Phe Arg Phe Thr Glu Asn Phe Ala Ala Lys Ala Gly Val Ala Val Gly
 485 490 495
 Thr Ser Ser Gly Ser Ser Ala Ala Tyr His Val Gly Val Asn Tyr Glu
 500 505 510

Trp

<210> 7201
 <211> 458
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

SEQLIST-20480.TXT

<400> 7201

```

Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
1      5      10      15
Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Pro Phe Ala
20      25      30
Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
35      40      45
Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
50      55      60
Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
65      70      75      80
Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
85      90      95
Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
100     105     110
Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
115     120     125
Leu Ile Thr Gly Gly Gly Gly Gly Gly Pro Asp Val Asp Phe Gly Asp
130     135     140
Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
145     150     155     160
Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
165     170     175
Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Gly Gly Gly
180     185     190
Gly Ser Gly Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn
195     200     205
Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu
210     215     220
Lys Leu Thr Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr
225     230     235     240
Asp Ala Ala Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu
245     250     255
Asn Ile Thr Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile
260     265     270
Asp Glu Lys Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu
275     280     285
Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala
290     295     300
Asp Glu Ala Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu
305     310     315     320
Thr Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala
325     330     335

```


SEQLIST-20480.TXT

Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys
340 345 350
Ala Glu Ala Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala
355 360 365
Thr Asn Lys Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr
370 375 380
Thr Arg Glu Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn
385 390 395 400
Ala Thr Thr Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser
405 410 415
Ile Ala Asp His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser
420 425 430
Asp Leu Arg Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu
435 440 445
Ser Gly Leu Phe Gln Pro Tyr Asn Val Gly
450 455

<210> 7202

<211> 670

<212> PRT

<213> Artificial Sequence

<220>

<223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400> 7202

Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
1 5 10 15
Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Pro Phe Ala
20 25 30
Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
35 40 45
Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
50 55 60
Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
65 70 75 80
Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
85 90 95
Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
100 105 110
Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
115 120 125
Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
130 135 140
Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
145 150 155 160

SEQLIST-20480.TXT

Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
 165 170 175
 Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly
 180 185 190
 Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe
 195 200 205
 Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg
 210 215 220
 Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg
 225 230 235 240
 Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr Phe Val Ser
 245 250 255
 Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr Val Tyr Asp
 260 265 270
 Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys Tyr
 275 280 285
 Phe Lys Asn His Thr Ser Pro Asp Val Asp Phe Gly Asp Ile Ser Gly
 290 295 300
 Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn
 305 310 315 320
 Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
 325 330 335
 Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Gly Gly Gly Gly Ser Gly
 340 345 350
 Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn Lys Gln Asn
 355 360 365
 Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu Lys Leu Thr
 370 375 380
 Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr Asp Ala Ala
 385 390 395 400
 Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu Asn Ile Thr
 405 410 415
 Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile Asp Glu Lys
 420 425 430
 Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu Ala Phe Asn
 435 440 445
 Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala Asp Glu Ala
 450 455 460
 Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu Thr Lys Gln
 465 470 475 480
 Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala Gly Lys Ala
 485 490 495

SEQLIST-20480.TXT

Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys Ala Glu Ala
500 505 510
Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala Thr Asn Lys
515 520 525
Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr Thr Arg Glu
530 535 540
Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn Ala Thr Thr
545 550 555 560
Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser Ile Ala Asp
565 570 575
His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser Asp Leu Arg
580 585 590
Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu Ser Gly Leu
595 600 605
Phe Gln Pro Tyr Asn Val Gly Arg Phe Asn Val Thr Ala Ala Val Gly
610 615 620
Gly Tyr Lys Ser Glu Ser Ala Val Ala Ile Gly Thr Gly Phe Arg Phe
625 630 635 640
Thr Glu Asn Phe Ala Ala Lys Ala Gly Val Ala Val Gly Thr Ser Ser
645 650 655
Gly Ser Ser Ala Ala Tyr His Val Gly Val Asn Tyr Glu Trp
660 665 670

<210> 7203
<211> 615
<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400> 7203

Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
1 5 10 15
Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Pro Phe Ala
20 25 30
Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
35 40 45
Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
50 55 60
Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
65 70 75 80
Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
85 90 95
Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
100 105 110

SEQLIST-20480.TXT

Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
115 120 125
Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
130 135 140
Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
145 150 155 160
Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
165 170 175
Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly
180 185 190
Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe
195 200 205
Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg
210 215 220
Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg
225 230 235 240
Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr Phe Val Ser
245 250 255
Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr Val Tyr Asp
260 265 270
Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys Tyr
275 280 285
Phe Lys Asn His Thr Ser Pro Asp Val Asp Phe Gly Asp Ile Ser Gly
290 295 300
Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn
305 310 315 320
Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
325 330 335
Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Gly Gly Gly Gly Ser Gly
340 345 350
Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn Lys Gln Asn
355 360 365
Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu Lys Leu Thr
370 375 380
Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr Asp Ala Ala
385 390 395 400
Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu Asn Ile Thr
405 410 415
Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile Asp Glu Lys
420 425 430
Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu Ala Phe Asn
435 440 445

SEQLIST-20480.TXT

Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala Asp Glu Ala
 450 455 460
 Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu Thr Lys Gln
 465 470 475 480
 Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala Gly Lys Ala
 485 490 495
 Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys Ala Glu Ala
 500 505 510
 Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala Thr Asn Lys
 515 520 525
 Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr Thr Arg Glu
 530 535 540
 Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn Ala Thr Thr
 545 550 555 560
 Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser Ile Ala Asp
 565 570 575
 His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser Asp Leu Arg
 580 585 590
 Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu Ser Gly Leu
 595 600 605
 Phe Gln Pro Tyr Asn Val Gly
 610 615

<210> 7204

<211> 592

<212> PRT

<213> Artificial Sequence

<220>

<223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400> 7204

Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr
 1 5 10 15
 Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
 20 25 30
 Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
 35 40 45
 Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn
 50 55 60
 Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val
 65 70 75 80
 Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
 85 90 95
 Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
 100 105 110

SEQLIST-20480.TXT

Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu
 115 120 125
 Ala Ala Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val
 130 135 140
 Asp Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala
 145 150 155 160
 Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu
 165 170 175
 Arg Asn Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr
 180 185 190
 Phe Pro Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile
 195 200 205
 Thr Gln Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr
 210 215 220
 Phe Val Ser Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr
 225 230 235 240
 Val Tyr Asp Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu
 245 250 255
 Asp Lys Tyr Phe Lys Asn His Thr Ser Pro Asp Val Asp Phe Gly Asp
 260 265 270
 Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 275 280 285
 Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 290 295 300
 Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Gly Gly Gly
 305 310 315 320
 Gly Ser Gly Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn
 325 330 335
 Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu
 340 345 350
 Lys Leu Thr Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr
 355 360 365
 Asp Ala Ala Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu
 370 375 380
 Asn Ile Thr Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile
 385 390 395 400
 Asp Glu Lys Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu
 405 410 415
 Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala
 420 425 430
 Asp Glu Ala Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu
 435 440 445

SEQLIST-20480.TXT

Thr Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala
 450 455 460
 Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys
 465 470 475 480
 Ala Glu Ala Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala
 485 490 495
 Thr Asn Lys Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr
 500 505 510
 Thr Arg Glu Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn
 515 520 525
 Ala Thr Thr Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser
 530 535 540
 Ile Ala Asp His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser
 545 550 555 560
 Asp Leu Arg Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu
 565 570 575
 Ser Gly Leu Phe Gln Pro Tyr Asn Val Gly His His His His His His
 580 585 590

<210> 7205
 <211> 401
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400> 7205
 Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
 1 5 10 15
 Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Pro Phe Ala
 20 25 30
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 35 40 45
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 50 55 60
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 65 70 75 80
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 85 90 95
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 100 105 110
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 115 120 125
 Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln

SEQLIST-20480.TXT

```

130          135          140
Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
145          150          155
Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
          165          170          175
Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly
          180          185          190
val val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe
          195          200          205
Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg
          210          215          220
Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg
          225          230          235
Asn Phe Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr Phe Val Ser
          245          250          255
Gly Asn Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr Val Tyr Asp
          260          265          270
Pro Leu Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys Tyr
          275          280          285
Phe Lys Asn His Thr Ser Pro Asp Val Asp Phe Gly Asp Ile Ser Gly
          290          295          300
Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn
          305          310          315
Glu val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
          325          330          335
Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Arg Phe Asn val Thr Ala
          340          345          350
Ala val Gly Gly Tyr Lys Ser Glu Ser Ala Val Ala Ile Gly Thr Gly
          355          360          365
Phe Arg Phe Thr Glu Asn Phe Ala Ala Lys Ala Gly val Ala val Gly
          370          375          380
Thr Ser Ser Gly Ser Ser Ala Ala Tyr His val Gly val Asn Tyr Glu
          385          390          395          400

```

Trp

<210> 7206
 <211> 346
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Fusion polypeptide (SARS coronavirus & Neisseria meningitidis)

<400> 7206
 Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr

SEQLIST-20480.TXT

1		5		10		15
Phe	Cys	Ser	Gly	Ala	Leu	Ala
			20			25
Asn	Asp	Asp	Asp	Pro	Phe	Ala
				30		
Met	Gln	Met	Ala	Tyr	Arg	Phe
		35				40
Gly	Ile	Gly	Val	Thr	Gln	Asn
				45		
Leu	Tyr	Glu	Asn	Gln	Lys	Gln
	50				55	Ile
Ala	Asn	Gln	Phe	Asn	Lys	Ala
			60			
Ser	Gln	Ile	Gln	Glu	Ser	Leu
65				70		Thr
Thr	Thr	Thr	Ser	Thr	Ala	Leu
			75			Gly
						Lys
						80
Leu	Gln	Asp	Val	Val	Asn	Gln
				85		Asn
Ala	Gln	Ala	Leu	Asn	Thr	Leu
				90		Val
						95
Lys	Gln	Leu	Ser	Ser	Asn	Phe
			100			Gly
						Ala
						105
Ile	Ser	Ser	Val	Gln	Ile	Asp
						Arg
						110
Ile	Leu	Ser	Arg	Leu	Asp	Lys
		115				Val
						120
Glu	Ala	Glu	Val	Gln	Ile	Asp
						Arg
						125
Leu	Ile	Thr	Gly	Arg	Leu	Gln
	130					135
Ser	Leu	Gln	Thr	Tyr	Val	Thr
				140		Gln
						Gln
Leu	Ile	Arg	Ala	Ala	Glu	Ile
145					150	Arg
Ala	Ser	Ala	Asn	Leu	Ala	Ala
						Thr
						160
Lys	Met	Ser	Glu	Cys	Val	Leu
				165		Gly
						Gln
						Ser
						170
Lys	Arg	Val	Asp	Phe	Cys	
					175	
Gly	Lys	Gly	Tyr	His	Leu	Met
			180			Ser
						Phe
						185
Pro	Gln	Ala	Ala	Pro	His	Gly
						190
Val	Val	Phe	Leu	His	Val	Thr
		195				Tyr
						200
Pro	Ser	Gln	Glu	Arg	Asn	Phe
						205
Thr	Thr	Ala	Pro	Ala	Ile	Cys
						210
						215
His	Glu	Gly	Lys	Ala	Tyr	Phe
						220
Glu	Gly	Val	Phe	Val	Phe	Asn
225					230	Gly
Thr	Ser	Trp	Phe	Ile	Thr	Gln
		235				Arg
						240
Asn	Phe	Phe	Ser	Pro	Gln	Ile
				245		Ile
						Thr
						250
Asp	Asn	Thr	Phe	Val	Tyr	Asp
						255
Gly	Asn	Cys	Asp	Val	Val	Ile
			260			Gly
						Ile
						265
Ile	Asn	Asn	Thr	Val	Tyr	Asp
						270
Pro	Leu	Gln	Pro	Glu	Leu	Asp
		275				Lys
						Tyr
Phe	Lys	Asn	His	Thr	Ser	Pro
	290					295
Asp	Val	Asp	Phe	Gly	Asp	Ile
				300		Ser
						Gly
Ile	Asn	Ala	Ser	Val	Val	Asn
305					310	Ile
Gln	Lys	Glu	Ile	Asp	Arg	Leu
		315				Asn
						320
Glu	Val	Ala	Lys	Asn	Leu	Asn
				325		Glu
						Ser
						Leu
						330
Ile	Asp	Leu	Gln	Glu	Leu	
				335		
Gly	Lys	Tyr	Glu	Gln	Tyr	Ile
						Lys
						Trp
						Pro

340

<210> 7207
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7207
Asn Tyr Thr Gln
1

<210> 7208
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7208
Asn Val Thr Gly
1

<210> 7209
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7209
Asn Lys Ser Gln
1

<210> 7210
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7210
Asn Ser Thr Asn
1

<210> 7211
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7211
Asn Cys Thr Phe
1

<210> 7212
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7212
Asn Ile Thr Asn
1

<210> 7213
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7213
Asn Gly Thr Ile

1

<210> 7214
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7214
 Asn Ile Thr Asn
 1

<210> 7215
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7215
 Asn Ala Thr Lys
 1

<210> 7216
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7216
 Asn Ser Thr Phe
 1

<210> 7217
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7217
 Asn Ala Ser Ser
 1

<210> 7218
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7218
 Asn Cys Thr Asp
 1

<210> 7219
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7219
 Asn Phe Ser Ile
 1

<210> 7220
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7220
 Asn Phe Ser Gln

1

<210> 7221
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7221
Asn Gly Thr Ser
1

<210> 7222
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7222
Asn Asn Thr Val
1

<210> 7223
<211> 4
<212> PRT
<213> SARS coronavirus

<400> 7223
Asn Glu Ser Leu
1

<210> 7224
<211> 178
<212> DNA
<213> SARS coronavirus

<400> 7224
gggtttttaca cttagaaaca cagtctgtac cgtctgcgga atgtggaaag gttatggctg 60
tagttgtgac caactccgcg aacccttgat gcagtctgcg gatgcatcaa cgtttttaaa 120
cgggttttgcg gtgtaagtgc agcccgtctt acaccgtgcg gcacaggcac tagtactg 178

<210> 7225
<211> 44
<212> PRT
<213> SARS coronavirus

<400> 7225
Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met Trp Lys
1 5 10 15

Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met Gln Ser
20 25 30

Ala Asp Ala Ser Thr Phe Leu Asn Gly Phe Ala Val
35 40

<210> 7226
<211> 14
<212> PRT
<213> SARS coronavirus

<400> 7226
Val Gln Pro Val Leu His Arg Ala Ala Gln Ala Leu Val Leu
1 5 10

SEQLIST-20480.TXT

<210> 7227
 <211> 4
 <212> PRT
 <213> SARS coronavirus

<400> 7227
 Gly Phe Tyr Thr
 1

<210> 7228
 <211> 15
 <212> PRT
 <213> SARS coronavirus

<400> 7228
 Lys His Ser Leu Tyr Arg Leu Arg Asn Val Glu Arg Leu Trp Leu
 1 5 10 15

<210> 7229
 <211> 36
 <212> PRT
 <213> SARS coronavirus

<400> 7229
 Pro Thr Pro Arg Thr Leu Asp Ala Val Cys Gly Cys Ile Asn Val Phe
 1 5 10 15

Lys Arg Val Cys Gly Val Ser Ala Ala Arg Leu Thr Pro Cys Gly Thr
 20 25 30

Gly Thr Ser Thr
 35

<210> 7230
 <211> 69
 <212> DNA
 <213> SARS coronavirus

<400> 7230
 ccaactccgc gaacccttga tgcagtctgc ggatgcatca acgtttttaa acggggtttgc 60
 ggtgtaagt 69

<210> 7231
 <211> 23
 <212> PRT
 <213> SARS coronavirus

<400> 7231
 Gln Leu Arg Glu Pro Leu Met Gln Ser Ala Asp Ala Ser Thr Phe Leu
 1 5 10 15

Asn Arg Val Cys Gly Val Ser
 20

<210> 7232
 <211> 7073
 <212> PRT
 <213> SARS coronavirus

<400> 7232
 Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
 1 5 10 15

SEQLIST-20480.TXT

Ser Leu Pro Val₂₀ Leu Gln Val Arg Asp₂₅ Val Leu Val Arg Gly₃₀ Phe Gly
 Asp Ser Val₃₅ Glu Glu Ala Leu Ser₄₀ Glu Ala Arg Glu His₄₅ Leu Lys Asn
 Gly Thr₅₀ Cys Gly Leu Val₅₅ Glu Leu Glu Lys Gly Val₆₀ Leu Pro Gln Leu
 Glu Gln Pro Tyr Val₆₅ Phe₇₀ Ile Lys Arg Ser Asp₇₅ Ala Leu Ser Thr Asn₈₀
 His Gly His Lys Val₈₅ Val Glu Leu Val₉₀ Ala Glu Met Asp Gly₉₅ Ile Gln
 Tyr Gly Arg Ser₁₀₀ Gly Ile Thr Leu Gly₁₀₅ Val Leu Val Pro His₁₁₀ Val Gly
 Glu Thr Pro₁₁₅ Ile Ala Tyr Arg Asn₁₂₀ Val Leu Leu Arg Lys₁₂₅ Asn Gly Asn
 Lys Gly₁₃₀ Ala Gly Gly His Ser₁₃₅ Tyr Gly Ile Asp Leu₁₄₀ Lys Ser Tyr Asp
 Leu₁₄₅ Gly Asp Glu Leu Gly₁₅₀ Thr Asp Pro Ile Glu₁₅₅ Asp Tyr Glu Gln Asn₁₆₀
 Trp Asn Thr Lys His₁₆₅ Gly Ser Gly Ala Leu₁₇₀ Arg Glu Leu Thr Arg₁₇₅ Glu
 Leu Asn Gly Gly₁₈₀ Ala Val Thr Arg Tyr₁₈₅ Val Asp Asn Asn Phe₁₉₀ Cys Gly
 Pro Asp Gly₁₉₅ Tyr Pro Leu Asp Cys₂₀₀ Ile Lys Asp Phe Leu₂₀₅ Ala Arg Ala
 Gly Lys₂₁₀ Ser Met Cys Thr Leu₂₁₅ Ser Glu Gln Leu Asp₂₂₀ Tyr Ile Glu Ser
 Lys₂₂₅ Arg Gly Val Tyr Cys₂₃₀ Cys Arg Asp His Glu₂₃₅ His Glu Ile Ala Trp₂₄₀
 Phe Thr Glu Arg Ser₂₄₅ Asp Lys Ser Tyr Glu₂₅₀ His Gln Thr Pro Phe₂₅₅ Glu
 Ile Lys Ser Ala₂₆₀ Lys Lys Phe Asp Thr₂₆₅ Phe Lys Gly Glu Cys₂₇₀ Pro Lys
 Phe Val Phe₂₇₅ Pro Leu Asn Ser Lys₂₈₀ Val Lys Val Ile Gln₂₈₅ Pro Arg Val
 Glu Lys₂₉₀ Lys Lys Thr Glu Gly₂₉₅ Phe Met Gly Arg Ile₃₀₀ Arg Ser Val Tyr
 Pro₃₀₅ Val Ala Ser Pro Gln₃₁₀ Glu Cys Asn Asn Met₃₁₅ His Leu Ser Thr Leu₃₂₀
 Met Lys Cys Asn His₃₂₅ Cys Asp Glu Val Ser₃₃₀ Trp Gln Thr Cys Asp₃₃₅ Phe
 Leu Lys Ala Thr₃₄₀ Cys Glu His Cys Gly₃₄₅ Thr Glu Asn Leu Val₃₅₀ Ile Glu

SEQLIST-20480.TXT

Gly Pro Thr Thr Cys Gly Tyr Leu Pro Thr Asn Ala Val Val Lys Met
355 360 365

Pro Cys Pro Ala Cys Gln Asp Pro Glu Ile Gly Pro Glu His Ser Val
370 375 380

Ala Asp Tyr His Asn His Ser Asn Ile Glu Thr Arg Leu Arg Lys Gly
385 390 395 400

Gly Arg Thr Arg Cys Phe Gly Gly Cys Val Phe Ala Tyr Val Gly Cys
405 410 415

Tyr Asn Lys Arg Ala Tyr Trp Val Pro Arg Ala Ser Ala Asp Ile Gly
420 425 430

Ser Gly His Thr Gly Ile Thr Gly Asp Asn Val Glu Thr Leu Asn Glu
435 440 445

Asp Leu Leu Glu Ile Leu Ser Arg Glu Arg Val Asn Ile Asn Ile Val
450 455 460

Gly Asp Phe His Leu Asn Glu Glu Val Ala Ile Ile Leu Ala Ser Phe
465 470 475 480

Ser Ala Ser Thr Ser Ala Phe Ile Asp Thr Ile Lys Ser Leu Asp Tyr
485 490 495

Lys Ser Phe Lys Thr Ile Val Glu Ser Cys Gly Asn Tyr Lys Val Thr
500 505 510

Lys Gly Lys Pro Val Lys Gly Ala Trp Asn Ile Gly Gln Gln Arg Ser
515 520 525

Val Leu Thr Pro Leu Cys Gly Phe Pro Ser Gln Ala Ala Gly Val Ile
530 535 540

Arg Ser Ile Phe Ala Arg Thr Leu Asp Ala Ala Asn His Ser Ile Pro
545 550 555 560

Asp Leu Gln Arg Ala Ala Val Thr Ile Leu Asp Gly Ile Ser Glu Gln
565 570 575

Ser Leu Arg Leu Val Asp Ala Met Val Tyr Thr Ser Asp Leu Leu Thr
580 585 590

Asn Ser Val Ile Ile Met Ala Tyr Val Thr Gly Gly Leu Val Gln Gln
595 600 605

Thr Ser Gln Trp Leu Ser Asn Leu Leu Gly Thr Thr Val Glu Lys Leu
610 615 620

Arg Pro Ile Phe Glu Trp Ile Glu Ala Lys Leu Ser Ala Gly Val Glu
625 630 635 640

Phe Leu Lys Asp Ala Trp Glu Ile Leu Lys Phe Leu Ile Thr Gly Val
645 650 655

Phe Asp Ile Val Lys Gly Gln Ile Gln Val Ala Ser Asp Asn Ile Lys
660 665 670

Asp Cys Val Lys Cys Phe Ile Asp Val Val Asn Lys Ala Leu Glu Met
675 680 685

SEQLIST-20480.TXT

Cys Ile Asp Gln Val Thr Ile Ala Gly Ala Lys Leu Arg Ser Leu Asn
 690 695 700
 Leu Gly Glu Val Phe Ile Ala Gln Ser Lys Gly Leu Tyr Arg Gln Cys
 705 710 715 720
 Ile Arg Gly Lys Glu Gln Leu Gln Leu Leu Met Pro Leu Lys Ala Pro
 725 730 735
 Lys Glu Val Thr Phe Leu Glu Gly Asp Ser His Asp Thr Val Leu Thr
 740 745 750
 Ser Glu Glu Val Val Leu Lys Asn Gly Glu Leu Glu Ala Leu Glu Thr
 755 760 765
 Pro Val Asp Ser Phe Thr Asn Gly Ala Ile Val Gly Thr Pro Val Cys
 770 775 780
 Val Asn Gly Leu Met Leu Leu Glu Ile Lys Asp Lys Glu Gln Tyr Cys
 785 790 795 800
 Ala Leu Ser Pro Gly Leu Leu Ala Thr Asn Asn Val Phe Arg Leu Lys
 805 810 815
 Gly Gly Ala Pro Ile Lys Gly Val Thr Phe Gly Glu Asp Thr Val Trp
 820 825 830
 Glu Val Gln Gly Tyr Lys Asn Val Arg Ile Thr Phe Glu Leu Asp Glu
 835 840 845
 Arg Val Asp Lys Val Leu Asn Glu Lys Cys Ser Val Tyr Thr Val Glu
 850 855 860
 Ser Gly Thr Glu Val Thr Glu Phe Ala Cys Val Val Ala Glu Ala Val
 865 870 875 880
 Val Lys Thr Leu Gln Pro Val Ser Asp Leu Leu Thr Asn Met Gly Ile
 885 890 895
 Asp Leu Asp Glu Trp Ser Val Ala Thr Phe Tyr Leu Phe Asp Asp Ala
 900 905 910
 Gly Glu Glu Asn Phe Ser Ser Arg Met Tyr Cys Ser Phe Tyr Pro Pro
 915 920 925
 Asp Glu Glu Glu Glu Asp Asp Ala Glu Cys Glu Glu Glu Glu Ile Asp
 930 935 940
 Glu Thr Cys Glu His Glu Tyr Gly Thr Glu Asp Asp Tyr Gln Gly Leu
 945 950 955 960
 Pro Leu Glu Phe Gly Ala Ser Ala Glu Thr Val Arg Val Glu Glu Glu
 965 970 975
 Glu Glu Glu Asp Trp Leu Asp Asp Thr Thr Glu Gln Ser Glu Ile Glu
 980 985 990
 Pro Glu Pro Glu Pro Thr Pro Glu Glu Pro Val Asn Gln Phe Thr Gly
 995 1000 1005
 Tyr Leu Lys Leu Thr Asp Asn Val Ala Ile Lys Cys Val Asp Ile Val
 1010 1015 1020

SEQLIST-20480.TXT

Lys Glu Ala Gln Ser Ala Asn Pro Met Val Ile Val Asn Ala Ala Asn
 1025 1030 1035 1040
 Ile His Leu Lys His Gly Gly Gly Val Ala Gly Ala Leu Asn Lys Ala
 1045 1050 1055
 Thr Asn Gly Ala Met Gln Lys Glu Ser Asp Asp Tyr Ile Lys Leu Asn
 1060 1065 1070
 Gly Pro Leu Thr Val Gly Gly Ser Cys Leu Leu Ser Gly His Asn Leu
 1075 1080 1085
 Ala Lys Lys Cys Leu His Val Val Gly Pro Asn Leu Asn Ala Gly Glu
 1090 1095 1100
 Asp Ile Gln Leu Leu Lys Ala Ala Tyr Glu Asn Phe Asn Ser Gln Asp
 1105 1110 1115 1120
 Ile Leu Leu Ala Pro Leu Leu Ser Ala Gly Ile Phe Gly Ala Lys Pro
 1125 1130 1135
 Leu Gln Ser Leu Gln Val Cys Val Gln Thr Val Arg Thr Gln Val Tyr
 1140 1145 1150
 Ile Ala Val Asn Asp Lys Ala Leu Tyr Glu Gln Val Val Met Asp Tyr
 1155 1160 1165
 Leu Asp Asn Leu Lys Pro Arg Val Glu Ala Pro Lys Gln Glu Glu Pro
 1170 1175 1180
 Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser Val Val Gln Lys
 1185 1190 1195 1200
 Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile Asp Glu Val Thr
 1205 1210 1215
 Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys Leu Leu Leu Phe
 1220 1225 1230
 Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln Asn Met Leu Arg
 1235 1240 1245
 Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro Tyr Met Val Gly
 1250 1255 1260
 Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val Ile Pro Ser Lys
 1265 1270 1275 1280
 Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala Leu Lys Lys Val
 1285 1290 1295
 Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln Gly Cys Ala Gly
 1300 1305 1310
 Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys Cys Lys Ser Ala
 1315 1320 1325
 Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys Glu Glu Ile Leu
 1330 1335 1340
 Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala His Ala Glu Glu
 1345 1350 1355 1360

SEQLIST-20480.TXT

Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg Ala Ile Met Ala
1365 1370 1375

Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln Glu Gly Ile Val
1380 1385 1390

Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys Glu Pro Val Ala
1395 1400 1405

Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro Leu Val Thr Met
1410 1415 1420

Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu Glu Ala Ala Arg
1425 1430 1435 1440

Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser Val Ser Ser Pro
1445 1450 1455

Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser Ser Ser Lys Thr
1460 1465 1470

Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala Gly Ser Tyr Arg
1475 1480 1485

Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly Val Glu Phe Leu
1490 1495 1500

Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu Ser Pro Val Glu
1505 1510 1515 1520

Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys Leu Lys Ser Leu
1525 1530 1535

Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe Thr Thr Val Asp
1540 1545 1550

Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser Met Thr Tyr Gly
1555 1560 1565

Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp Val Thr Lys Ile
1570 1575 1580

Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe Val Leu Pro Ser
1585 1590 1595 1600

Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr His Thr Leu Asp
1605 1610 1615

Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn His Thr Lys Lys
1620 1625 1630

Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile Lys Trp Ala Asp
1635 1640 1645

Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu Gln Gln Leu Glu
1650 1655 1660

Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr Tyr Arg Ala Arg
1665 1670 1675 1680

Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu Ala Tyr Ser Asn
1685 1690 1695

SEQLIST-20480.TXT

Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr Met Thr His Leu
1700 1705 1710

Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val Leu Asn Val Val
1715 1720 1725

Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr Gly Val Glu Ala
1730 1735 1740

Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu Lys Thr Gly Val
1745 1750 1755 1760

Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln Tyr Leu Val Gln
1765 1770 1775

Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro Ala Glu Tyr Lys
1780 1785 1790

Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr Thr Gly Asn Tyr
1795 1800 1805

Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu Thr Leu Tyr Arg
1810 1815 1820

Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr Lys Gly Pro Val
1825 1830 1835 1840

Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr Thr Ile Lys Pro
1845 1850 1855

Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu Ile Glu Pro Lys
1860 1865 1870

Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr Thr Glu Gln Pro
1875 1880 1885

Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala Ser Phe Asp Asn
1890 1895 1900

Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp Asp Leu Asn Gln
1905 1910 1915 1920

Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu Ser Val Thr Phe
1925 1930 1935

Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp Tyr Arg His Tyr
1940 1945 1950

Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His Lys Pro Ile Val
1955 1960 1965

Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe Lys Pro Asn Thr
1970 1975 1980

Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val Asp Thr Ser Asn
1985 1990 1995 2000

Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly Met Asp Asn Leu
2005 2010 2015

Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val Val Glu Asn Pro
2020 2025 2030

SEQLIST-20480.TXT

Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys Thr Thr Glu Val
2035 2040 2045
Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly Val Lys Val Thr
2050 2055 2060
Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr Val Glu Asn Thr
2065 2070 2075 2080
Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu Ala Leu Gly Leu
2085 2090 2095
Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn Ser Val Pro Trp
2100 2105 2110
Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly Gln Ala Ala Ile
2115 2120 2125
Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg Val Phe Asn Asn
2130 2135 2140
Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu Cys Thr Phe Thr
2145 2150 2155 2160
Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro Thr Thr Ile Ala
2165 2170 2175
Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu Asp Ala Gly Ile
2180 2185 2190
Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe Thr Ile Ala Met
2195 2200 2205
Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu Ile Cys Val Thr
2210 2215 2220
Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala Pro Ser Tyr Cys
2225 2230 2235 2240
Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn Val Thr Thr Met
2245 2250 2255
Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys Leu Ser Gly Leu
2260 2265 2270
Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile Gln Val Thr Ile
2275 2280 2285
Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu Ala Ala Glu Trp
2290 2295 2300
Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr Leu Leu Gly Leu
2305 2310 2315 2320
Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala Ser His Phe Ile
2325 2330 2335
Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile Val Gln Met Ala
2340 2345 2350
Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe Ala Ser Phe Tyr
2355 2360 2365

SEQLIST-20480.TXT

Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly Cys Thr Ser Ser
2370 2375 2380

Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr Arg Val Glu Cys
2385 2390 2395 2400

Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr Val Tyr Ala Asn
2405 2410 2415

Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn Cys Leu Asn Cys
2420 2425 2430

Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp Glu Val Ala Arg
2435 2440 2445

Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro Thr Asp Gln Ser
2450 2455 2460

Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly Ala Leu His Leu
2465 2470 2475 2480

Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg His Pro Leu Ser
2485 2490 2495

His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn Thr Lys Gly Ser
2500 2505 2510

Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser Lys Cys Asp Glu
2515 2520 2525

Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln Leu Met Cys Gln
2530 2535 2540

Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp Val Gly Asp Ser
2545 2550 2555 2560

Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val Asp Thr Phe Ser
2565 2570 2575

Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala Leu Val Ala Thr
2580 2585 2590

Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp Gly Val Leu Ser
2595 2600 2605

Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp Thr Asp Val Asp
2610 2615 2620

Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His His Ser Asp Leu
2625 2630 2635 2640

Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu Thr Tyr Asn Lys
2645 2650 2655

Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys Ile Asp Cys Asn
2660 2665 2670

Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His Asn Val Ser Leu
2675 2680 2685

Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu Gln Leu Arg Lys
2690 2695 2700

SEQLIST-20480.TXT

Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro Phe Arg Leu Thr
2705 2710 2715 2720

Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr Thr Lys Ile Ser
2725 2730 2735

Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys Leu Met Leu Lys
2740 2745 2750

Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys Tyr Ile Val Met
2755 2760 2765

Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr Asn Glu Ile Ile
2770 2775 2780

Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp Ile Ile Ser Thr
2785 2790 2795 2800

Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp Ala Trp Phe Ser
2805 2810 2815

Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys Pro Val Val Ala
2820 2825 2830

Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro Gly Leu Pro Gly
2835 2840 2845

Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His Phe Leu Pro Arg
2850 2855 2860

Val Phe Ser Ala Val Gly Asn Ile Cys Tyr Thr Pro Ser Lys Leu Ile
2865 2870 2875 2880

Glu Tyr Ser Asp Phe Ala Thr Ser Ala Cys Val Leu Ala Ala Glu Cys
2885 2890 2895

Thr Ile Phe Lys Asp Ala Met Gly Lys Pro Val Pro Tyr Cys Tyr Asp
2900 2905 2910

Thr Asn Leu Leu Glu Gly Ser Ile Ser Tyr Ser Glu Leu Arg Pro Asp
2915 2920 2925

Thr Arg Tyr Val Leu Met Asp Gly Ser Ile Ile Gln Phe Pro Asn Thr
2930 2935 2940

Tyr Leu Glu Gly Ser Val Arg Val Val Thr Thr Phe Asp Ala Glu Tyr
2945 2950 2955 2960

Cys Arg His Gly Thr Cys Glu Arg Ser Glu Val Gly Ile Cys Leu Ser
2965 2970 2975

Thr Ser Gly Arg Trp Val Leu Asn Asn Glu His Tyr Arg Ala Leu Ser
2980 2985 2990

Gly Val Phe Cys Gly Val Asp Ala Met Asn Leu Ile Ala Asn Ile Phe
2995 3000 3005

Thr Pro Leu Val Gln Pro Val Gly Ala Leu Asp Val Ser Ala Ser Val
3010 3015 3020

Val Ala Gly Gly Ile Ile Ala Ile Leu Val Thr Cys Ala Ala Tyr Tyr
3025 3030 3035 3040

SEQLIST-20480.TXT

Phe Met Lys Phe Arg Arg Val Phe Gly Glu Tyr Asn His Val Val Ala
3045 3050 3055

Ala Asn Ala Leu Leu Phe Leu Met Ser Phe Thr Ile Leu Cys Leu Val
3060 3065 3070

Pro Ala Tyr Ser Phe Leu Pro Gly Val Tyr Ser Val Phe Tyr Leu Tyr
3075 3080 3085

Leu Thr Phe Tyr Phe Thr Asn Asp Val Ser Phe Leu Ala His Leu Gln
3090 3095 3100

Trp Phe Ala Met Phe Ser Pro Ile Val Pro Phe Trp Ile Thr Ala Ile
3105 3110 3115 3120

Tyr Val Phe Cys Ile Ser Leu Lys His Cys His Trp Phe Phe Asn Asn
3125 3130 3135

Tyr Leu Arg Lys Arg Val Met Phe Asn Gly Val Thr Phe Ser Thr Phe
3140 3145 3150

Glu Glu Ala Ala Leu Cys Thr Phe Leu Leu Asn Lys Glu Met Tyr Leu
3155 3160 3165

Lys Leu Arg Ser Glu Thr Leu Leu Pro Leu Thr Gln Tyr Asn Arg Tyr
3170 3175 3180

Leu Ala Leu Tyr Asn Lys Tyr Lys Tyr Phe Ser Gly Ala Leu Asp Thr
3185 3190 3195 3200

Thr Ser Tyr Arg Glu Ala Ala Cys Cys His Leu Ala Lys Ala Leu Asn
3205 3210 3215

Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln Pro Pro Gln Thr
3220 3225 3230

Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg Lys Met Ala Phe
3235 3240 3245

Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val Thr Cys Gly Thr
3250 3255 3260

Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val Tyr Cys Pro Arg
3265 3270 3275 3280

His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro Asn Tyr Glu Asp
3285 3290 3295

Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val Gln Ala Gly Asn
3300 3305 3310

Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn Cys Leu Leu Arg
3315 3320 3325

Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys Tyr Lys Phe Val
3330 3335 3340

Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala Cys Tyr Asn Gly
3345 3350 3355 3360

Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro Asn His Thr Ile
3365 3370 3375

SEQLIST-20480.TXT

Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val Gly Phe Asn Ile
3380 3385 3390

Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His Met Glu Leu Pro
3395 3400 3405

Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys Phe Tyr Gly Pro
3410 3415 3420

Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr Asp Thr Thr Ile
3425 3430 3435 3440

Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val Ile Asn Gly Asp
3445 3450 3455

Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn Asp Phe Asn Leu
3460 3465 3470

Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln Asp His Val Asp
3475 3480 3485

Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala Val Leu Asp Met
3490 3495 3500

Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met Asn Gly Arg Thr
3505 3510 3515 3520

Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr Pro Phe Asp Val
3525 3530 3535

Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys Phe Lys Lys Ile
3540 3545 3550

Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe Leu Thr Ser Leu
3555 3560 3565

Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe Phe Phe Val Tyr
3570 3575 3580

Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met Ala Ile Ala Ala
3585 3590 3595 3600

Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe Leu Cys Leu Phe
3605 3610 3615

Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn Met Val Tyr Met
3620 3625 3630

Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu Glu Leu Ala Asp
3635 3640 3645

Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val Met Tyr Ala Ser
3650 3655 3660

Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr Val Tyr Asp Asp
3665 3670 3675 3680

Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile Thr Leu Val Tyr
3685 3690 3695

Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile Ser Met Trp Ala
3700 3705 3710

SEQLIST-20480.TXT

Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val Val Thr Thr Ile
3715 3720 3725

Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val Glu Tyr Tyr Pro
3730 3735 3740

Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile Met Leu Val Tyr
3745 3750 3755 3760

Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly Leu Phe Cys Leu
3765 3770 3775

Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr Asp Tyr Leu Val
3780 3785 3790

Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly Leu Leu Pro Pro
3795 3800 3805

Lys Ser Ser Ile Asp Ala Phe Lys Leu Asn Ile Lys Leu Leu Gly Ile
3810 3815 3820

Gly Gly Lys Pro Cys Ile Lys Val Ala Thr Val Gln Ser Lys Met Ser
3825 3830 3835 3840

Asp Val Lys Cys Thr Ser Val Val Leu Leu Ser Val Leu Gln Gln Leu
3845 3850 3855

Arg Val Glu Ser Ser Ser Lys Leu Trp Ala Gln Cys Val Gln Leu His
3860 3865 3870

Asn Asp Ile Leu Leu Ala Lys Asp Thr Thr Glu Ala Phe Glu Lys Met
3875 3880 3885

Val Ser Leu Leu Ser Val Leu Leu Ser Met Gln Gly Ala Val Asp Ile
3890 3895 3900

Asn Arg Leu Cys Glu Glu Met Leu Asp Asn Arg Ala Thr Leu Gln Ala
3905 3910 3915 3920

Ile Ala Ser Glu Phe Ser Ser Leu Pro Ser Tyr Ala Ala Tyr Ala Thr
3925 3930 3935

Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala Asn Gly Asp Ser Glu Val
3940 3945 3950

Val Leu Lys Lys Leu Lys Lys Ser Leu Asn Val Ala Lys Ser Glu Phe
3955 3960 3965

Asp Arg Asp Ala Ala Met Gln Arg Lys Leu Glu Lys Met Ala Asp Gln
3970 3975 3980

Ala Met Thr Gln Met Tyr Lys Gln Ala Arg Ser Glu Asp Lys Arg Ala
3985 3990 3995 4000

Lys Val Thr Ser Ala Met Gln Thr Met Leu Phe Thr Met Leu Arg Lys
4005 4010 4015

Leu Asp Asn Asp Ala Leu Asn Asn Ile Ile Asn Asn Ala Arg Asp Gly
4020 4025 4030

Cys Val Pro Leu Asn Ile Ile Pro Leu Thr Thr Ala Ala Lys Leu Met
4035 4040 4045

SEQLIST-20480.TXT

Val Val Val Pro Asp Tyr Gly Thr Tyr Lys Asn Thr Cys Asp Gly Asn
 4050 4055 4060
 Thr Phe Thr Tyr Ala Ser Ala Leu Trp Glu Ile Gln Gln Val Val Asp
 4065 4070 4075 4080
 Ala Asp Ser Lys Ile Val Gln Leu Ser Glu Ile Asn Met Asp Asn Ser
 4085 4090 4095
 Pro Asn Leu Ala Trp Pro Leu Ile Val Thr Ala Leu Arg Ala Asn Ser
 4100 4105 4110
 Ala Val Lys Leu Gln Asn Asn Glu Leu Ser Pro Val Ala Leu Arg Gln
 4115 4120 4125
 Met Ser Cys Ala Ala Gly Thr Thr Gln Thr Ala Cys Thr Asp Asp Asn
 4130 4135 4140
 Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg Phe Val Leu Ala
 4145 4150 4155 4160
 Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg Phe Pro Lys Ser
 4165 4170 4175
 Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro Pro Cys Arg Phe
 4180 4185 4190
 Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr Leu Tyr Phe Ile
 4195 4200 4205
 Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu Gly Ser Leu Ala
 4210 4215 4220
 Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu Val Pro Ala Asn
 4225 4230 4235 4240
 Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp Pro Ala Lys Ala
 4245 4250 4255
 Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile Thr Asn Cys Val
 4260 4265 4270
 Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala Ile Thr Val Thr
 4275 4280 4285
 Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly Ala Ser Cys Cys
 4290 4295 4300
 Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro Lys Gly Phe Cys
 4305 4310 4315 4320
 Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr Cys Ala Asn Asp
 4325 4330 4335
 Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met
 4340 4345 4350
 Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met
 4355 4360 4365
 Gln Ser Ala Asp Ala Ser Thr Phe Leu Asn Arg Val Cys Gly Val Ser
 4370 4375 4380

SEQLIST-20480.TXT

Ala Ala Arg Leu Thr Pro Cys Gly Thr Gly Thr Ser Thr Asp Val Val
4385 4390 4395 4400

Tyr Arg Ala Phe Asp Ile Tyr Asn Glu Lys Val Ala Gly Phe Ala Lys
4405 4410 4415

Phe Leu Lys Thr Asn Cys Cys Arg Phe Gln Glu Lys Asp Glu Glu Gly
4420 4425 4430

Asn Leu Leu Asp Ser Tyr Phe Val Val Lys Arg His Thr Met Ser Asn
4435 4440 4445

Tyr Gln His Glu Glu Thr Ile Tyr Asn Leu Val Lys Asp Cys Pro Ala
4450 4455 4460

Val Ala Val His Asp Phe Phe Lys Phe Arg Val Asp Gly Asp Met Val
4465 4470 4475 4480

Pro His Ile Ser Arg Gln Arg Leu Thr Lys Tyr Thr Met Ala Asp Leu
4485 4490 4495

Val Tyr Ala Leu Arg His Phe Asp Glu Gly Asn Cys Asp Thr Leu Lys
4500 4505 4510

Glu Ile Leu Val Thr Tyr Asn Cys Cys Asp Asp Asp Tyr Phe Asn Lys
4515 4520 4525

Lys Asp Trp Tyr Asp Phe Val Glu Asn Pro Asp Ile Leu Arg Val Tyr
4530 4535 4540

Ala Asn Leu Gly Glu Arg Val Arg Gln Ser Leu Leu Lys Thr Val Gln
4545 4550 4555 4560

Phe Cys Asp Ala Met Arg Asp Ala Gly Ile Val Gly Val Leu Thr Leu
4565 4570 4575

Asp Asn Gln Asp Leu Asn Gly Asn Trp Tyr Asp Phe Gly Asp Phe Val
4580 4585 4590

Gln Val Ala Pro Gly Cys Gly Val Pro Ile Val Asp Ser Tyr Tyr Ser
4595 4600 4605

Leu Leu Met Pro Ile Leu Thr Leu Thr Arg Ala Leu Ala Ala Glu Ser
4610 4615 4620

His Met Asp Ala Asp Leu Ala Lys Pro Leu Ile Lys Trp Asp Leu Leu
4625 4630 4635 4640

Lys Tyr Asp Phe Thr Glu Glu Arg Leu Cys Leu Phe Asp Arg Tyr Phe
4645 4650 4655

Lys Tyr Trp Asp Gln Thr Tyr His Pro Asn Cys Ile Asn Cys Leu Asp
4660 4665 4670

Asp Arg Cys Ile Leu His Cys Ala Asn Phe Asn Val Leu Phe Ser Thr
4675 4680 4685

Val Phe Pro Pro Thr Ser Phe Gly Pro Leu Val Arg Lys Ile Phe Val
4690 4695 4700

Asp Gly Val Pro Phe Val Val Ser Thr Gly Tyr His Phe Arg Glu Leu
4705 4710 4715 4720

SEQLIST-20480.TXT

Gly Val Val His Asn Gln Asp Val Asn Leu His Ser Ser Arg Leu Ser
4725 4730 4735

Phe Lys Glu Leu Leu Val Tyr Ala Ala Asp Pro Ala Met His Ala Ala
4740 4745 4750

Ser Gly Asn Leu Leu Leu Asp Lys Arg Thr Thr Cys Phe Ser Val Ala
4755 4760 4765

Ala Leu Thr Asn Asn Val Ala Phe Gln Thr Val Lys Pro Gly Asn Phe
4770 4775 4780

Asn Lys Asp Phe Tyr Asp Phe Ala Val Ser Lys Gly Phe Phe Lys Glu
4785 4790 4795 4800

Gly Ser Ser Val Glu Leu Lys His Phe Phe Phe Ala Gln Asp Gly Asn
4805 4810 4815

Ala Ala Ile Ser Asp Tyr Asp Tyr Tyr Arg Tyr Asn Leu Pro Thr Met
4820 4825 4830

Cys Asp Ile Arg Gln Leu Leu Phe Val Val Glu Val Val Asp Lys Tyr
4835 4840 4845

Phe Asp Cys Tyr Asp Gly Gly Cys Ile Asn Ala Asn Gln Val Ile Val
4850 4855 4860

Asn Asn Leu Asp Lys Ser Ala Gly Phe Pro Phe Asn Lys Trp Gly Lys
4865 4870 4875 4880

Ala Arg Leu Tyr Tyr Asp Ser Met Ser Tyr Glu Asp Gln Asp Ala Leu
4885 4890 4895

Phe Ala Tyr Thr Lys Arg Asn Val Ile Pro Thr Ile Thr Gln Met Asn
4900 4905 4910

Leu Lys Tyr Ala Ile Ser Ala Lys Asn Arg Ala Arg Thr Val Ala Gly
4915 4920 4925

Val Ser Ile Cys Ser Thr Met Thr Asn Arg Gln Phe His Gln Lys Leu
4930 4935 4940

Leu Lys Ser Ile Ala Ala Thr Arg Gly Ala Thr Val Val Ile Gly Thr
4945 4950 4955 4960

Ser Lys Phe Tyr Gly Gly Trp His Asn Met Leu Lys Thr Val Tyr Ser
4965 4970 4975

Asp Val Glu Thr Pro His Leu Met Gly Trp Asp Tyr Pro Lys Cys Asp
4980 4985 4990

Arg Ala Met Pro Asn Met Leu Arg Ile Met Ala Ser Leu Val Leu Ala
4995 5000 5005

Arg Lys His Asn Thr Cys Cys Asn Leu Ser His Arg Phe Tyr Arg Leu
5010 5015 5020

Ala Asn Glu Cys Ala Gln Val Leu Ser Glu Met Val Met Cys Gly Gly
5025 5030 5035 5040

Ser Leu Tyr Val Lys Pro Gly Gly Thr Ser Ser Gly Asp Ala Thr Thr
5045 5050 5055

SEQLIST-20480.TXT

Ala Tyr Ala Asn Ser Val Phe Asn Ile Cys Gln Ala Val Thr Ala Asn
5060 5065 5070

Val Asn Ala Leu Leu Ser Thr Asp Gly Asn Lys Ile Ala Asp Lys Tyr
5075 5080 5085

Val Arg Asn Leu Gln His Arg Leu Tyr Glu Cys Leu Tyr Arg Asn Arg
5090 5095 5100

Asp Val Asp His Glu Phe Val Asp Glu Phe Tyr Ala Tyr Leu Arg Lys
5105 5110 5115 5120

His Phe Ser e e Ile Leu Ser Asp Asp Ala Val Val Cys Tyr Asn
5125 5130 5135

Ser Asn Tyr Ala Ala Gln Gly Leu Val Ala Ser Ile Lys Asn Phe Lys
5140 5145 5150

Ala Val Leu Tyr Tyr Gln Asn Asn Val Phe e Ser Glu Ala Lys Cys
5155 5160 5165

Trp Thr Glu Thr Asp Leu Thr Lys Gly Pr His Glu Phe Cys Ser Gln
5170 5175 5180

His Thr e Leu Val Lys Gln Gly Asp Asp Tyr Val Tyr Leu Pr Tyr
5185 5190 5195 5200

Pr Asp Pr Ser Arg Ile Leu Gly Ala Gly Cys Phe Val Asp Asp Ile
5205 5210 5215

Val Lys Thr Asp Gly Thr Leu e Ile Glu Arg Phe Val Ser Leu Ala
5220 5225 5230

Ile Asp Ala Tyr Pr Leu Thr Lys His Pr Asn Gln Glu Tyr Ala Asp
5235 5240 5245

Val Phe His Leu Tyr Leu Gln Tyr Ile Arg Lys Leu His Asp Glu Leu
5250 5255 5260

Thr Gly His e Leu Asp e Tyr Ser Val e Leu Thr Asn Asp Asn
5265 5270 5275 5280

Thr Ser Arg Tyr Trp Glu Pr Glu Phe Tyr Glu Ala e Tyr Thr Pr
5285 5290 5295

His Thr Val Leu Gln Ala Val Gly Ala Cys Val Leu Cys Asn Ser Gln
5300 5305 5310

Thr Ser Leu Arg Cys Gly Ala Cys Ile Arg Arg Pr Phe Leu Cys Cys
5315 5320 5325

Lys Cys Cys Tyr Asp His Val Ile Ser Thr Ser His Lys Leu Val Leu
5330 5335 5340

Ser Val Asn Pr Tyr Val Cys Asn Ala Pr Gly Cys Asp Val Thr Asp
5345 5350 5355 5360

Val Thr Gln Leu Tyr Leu Gly Gly e Ser Tyr Tyr Cys Lys Ser His
5365 5370 5375

Lys Pr Pr Ile Ser Phe Pr Leu Cys Ala Asn Gly Gln Val Phe Gly
5380 5385 5390

SEQLIST-20480.TXT

Leu Tyr Lys Asn Thr Cys Val Gly Ser Asp Asn Val Thr Asp Phe Asn
5395 5400 5405

Ala Ile Ala Thr Cys Asp Trp Thr Asn Ala Gly Asp Tyr Ile Leu Ala
5410 5415 5420

Asn Thr Cys Thr Glu Arg Leu Lys Leu Phe Ala Ala Glu Thr Leu Lys
5425 5430 5435 5440

Ala Thr Glu Glu Thr Phe Lys Leu Ser Tyr Gly Ile Ala Thr Val Arg
5445 5450 5455

Glu Val Leu Ser Asp Arg Glu Leu His Leu Ser Trp Glu Val Gly Lys
5460 5465 5470

Pro Arg Pro Pro Leu Asn Arg Asn Tyr Val Phe Thr Gly Tyr Arg Val
5475 5480 5485

Thr Lys Asn Ser Lys Val Gln Ile Gly Glu Tyr Thr Phe Glu Lys Gly
5490 5495 5500

Asp Tyr Gly Asp Ala Val Val Tyr Arg Gly Thr Thr Thr Tyr Lys Leu
5505 5510 5515 5520

Asn Val Gly Asp Tyr Phe Val Leu Thr Ser His Thr Val Met Pro Leu
5525 5530 5535

Ser Ala Pro Thr Leu Val Pro Gln Glu His Tyr Val Arg Ile Thr Gly
5540 5545 5550

Leu Tyr Pro Thr Leu Asn Ile Ser Asp Glu Phe Ser Ser Asn Val Ala
5555 5560 5565

Asn Tyr Gln Lys Val Gly Met Gln Lys Tyr Ser Thr Leu Gln Gly Pro
5570 5575 5580

Pro Gly Thr Gly Lys Ser His Phe Ala Ile Gly Leu Ala Leu Tyr Tyr
5585 5590 5595 5600

Pro Ser Ala Arg Ile Val Tyr Thr Ala Cys Ser His Ala Ala Val Asp
5605 5610 5615

Ala Leu Cys Glu Lys Ala Leu Lys Tyr Leu Pro Ile Asp Lys Cys Ser
5620 5625 5630

Arg Ile Ile Pro Ala Arg Ala Arg Val Glu Cys Phe Asp Lys Phe Lys
5635 5640 5645

Val Asn Ser Thr Leu Glu Gln Tyr Val Phe Cys Thr Val Asn Ala Leu
5650 5655 5660

Pro Glu Thr Thr Ala Asp Ile Val Val Phe Asp Glu Ile Ser Met Ala
5665 5670 5675 5680

Thr Asn Tyr Asp Leu Ser Val Val Asn Ala Arg Leu Arg Ala Lys His
5685 5690 5695

Tyr Val Tyr Ile Gly Asp Pro Ala Gln Leu Pro Ala Pro Arg Thr Leu
5700 5705 5710

Leu Thr Lys Gly Thr Leu Glu Pro Glu Tyr Phe Asn Ser Val Cys Arg
5715 5720 5725

SEQLIST-20480.TXT

Leu Met Lys Thr Ile Gly Pro Asp Met Phe Leu Gly Thr Cys Arg Arg
5730 5735 5740

Cys Pro Ala Glu Ile Val Asp Thr Val Ser Ala Leu Val Tyr Asp Asn
5745 5750 5755 5760

Lys Leu Lys Ala His Lys Asp Lys Ser Ala Gln Cys Phe Lys Met Phe
5765 5770 5775

Tyr Lys Gly Val Ile Thr His Asp Val Ser Ser Ala Ile Asn Arg Pro
5780 5785 5790

Gln Ile Gly Val Val Arg Glu Phe Leu Thr Arg Asn Pro Ala Trp Arg
5795 5800 5805

Lys Ala Val Phe Ile Ser Pro Tyr Asn Ser Gln Asn Ala Val Ala Ser
5810 5815 5820

Lys Ile Leu Gly Leu Pro Thr Gln Thr Val Asp Ser Ser Gln Gly Ser
5825 5830 5835 5840

Glu Tyr Asp Tyr Val Ile Phe Thr Gln Thr Thr Glu Thr Ala His Ser
5845 5850 5855

Cys Asn Val Asn Arg Phe Asn Val Ala Ile Thr Arg Ala Lys Ile Gly
5860 5865 5870

Ile Leu Cys Ile Met Ser Asp Arg Asp Leu Tyr Asp Lys Leu Gln Phe
5875 5880 5885

Thr Ser Leu Glu Ile Pro Arg Arg Asn Val Ala Thr Leu Gln Ala Glu
5890 5895 5900

Asn Val Thr Gly Leu Phe Lys Asp Cys Ser Lys Ile Ile Thr Gly Leu
5905 5910 5915 5920

His Pro Thr Gln Ala Pro Thr His Leu Ser Val Asp Ile Lys Phe Lys
5925 5930 5935

Thr Glu Gly Leu Cys Val Asp Ile Pro Gly Ile Pro Lys Asp Met Thr
5940 5945 5950

Tyr Arg Arg Leu Ile Ser Met Met Gly Phe Lys Met Asn Tyr Gln Val
5955 5960 5965

Asn Gly Tyr Pro Asn Met Phe Ile Thr Arg Glu Glu Ala Ile Arg His
5970 5975 5980

Val Arg Ala Trp Ile Gly Phe Asp Val Glu Gly Cys His Ala Thr Arg
5985 5990 5995 6000

Asp Ala Val Gly Thr Asn Leu Pro Leu Gln Leu Gly Phe Ser Thr Gly
6005 6010 6015

Val Asn Leu Val Ala Val Pro Thr Gly Tyr Val Asp Thr Glu Asn Asn
6020 6025 6030

Thr Glu Phe Thr Arg Val Asn Ala Lys Pro Pro Pro Gly Asp Gln Phe
6035 6040 6045

Lys His Leu Ile Pro Leu Met Tyr Lys Gly Leu Pro Trp Asn Val Val
6050 6055 6060

SEQLIST-20480.TXT

Arg Ile Lys Ile Val Gln Met Leu Ser Asp Thr Leu Lys Gly Leu Ser
6065 6070 6075 6080

Asp Arg Val Val Phe Val Leu Trp Ala His Gly Phe Glu Leu Thr Ser
6085 6090 6095

Met Lys Tyr Phe Val Lys Ile Gly Pro Glu Arg Thr Cys Cys Leu Cys
6100 6105 6110

Asp Lys Arg Ala Thr Cys Phe Ser Thr Ser Ser Asp Thr Tyr Ala Cys
6115 6120 6125

Trp Asn His Ser Val Gly Phe Asp Tyr Val Tyr Asn Pro Phe Met Ile
6130 6135 6140

Asp Val Gln Gln Trp Gly Phe Thr Gly Asn Leu Gln Ser Asn His Asp
6145 6150 6155 6160

Gln His Cys Gln Val His Gly Asn Ala His Val Ala Ser Cys Asp Ala
6165 6170 6175

Ile Met Thr Arg Cys Leu Ala Val His Glu Cys Phe Val Lys Arg Val
6180 6185 6190

Asp Trp Ser Val Glu Tyr Pro Ile Ile Gly Asp Glu Leu Arg Val Asn
6195 6200 6205

Ser Ala Cys Arg Lys Val Gln His Met Val Val Lys Ser Ala Leu Leu
6210 6215 6220

Ala Asp Lys Phe Pro Val Leu His Asp Ile Gly Asn Pro Lys Ala Ile
6225 6230 6235 6240

Lys Cys Val Pro Gln Ala Glu Val Glu Trp Lys Phe Tyr Asp Ala Gln
6245 6250 6255

Pro Cys Ser Asp Lys Ala Tyr Lys Ile Glu Glu Leu Phe Tyr Ser Tyr
6260 6265 6270

Ala Thr His His Asp Lys Phe Thr Asp Gly Val Cys Leu Phe Trp Asn
6275 6280 6285

Cys Asn Val Asp Arg Tyr Pro Ala Asn Ala Ile Val Cys Arg Phe Asp
6290 6295 6300

Thr Arg Val Leu Ser Asn Leu Asn Leu Pro Gly Cys Asp Gly Gly Ser
6305 6310 6315 6320

Leu Tyr Val Asn Lys His Ala Phe His Thr Pro Ala Phe Asp Lys Ser
6325 6330 6335

Ala Phe Thr Asn Leu Lys Gln Leu Pro Phe Phe Tyr Tyr Ser Asp Ser
6340 6345 6350

Pro Cys Glu Ser His Gly Lys Gln Val Val Ser Asp Ile Asp Tyr Val
6355 6360 6365

Pro Leu Lys Ser Ala Thr Cys Ile Thr Arg Cys Asn Leu Gly Gly Ala
6370 6375 6380

Val Cys Arg His His Ala Asn Glu Tyr Arg Gln Tyr Leu Asp Ala Tyr
6385 6390 6395 6400

SEQLIST-20480.TXT

Asn Met Met Ile Ser Ala Gly Phe Ser Leu Trp Ile Tyr Lys Gln Phe
6405 6410 6415

Asp Thr Tyr Asn Leu Trp Asn Thr Phe Thr Arg Leu Gln Ser Leu Glu
6420 6425 6430

Asn Val Ala Tyr Asn Val Val Asn Lys Gly His Phe Asp Gly His Ala
6435 6440 6445

Gly Glu Ala Pro Val Ser Ile Ile Asn Asn Ala Val Tyr Thr Lys Val
6450 6455 6460

Asp Gly Ile Asp Val Glu Ile Phe Glu Asn Lys Thr Thr Leu Pro Val
6465 6470 6475 6480

Asn Val Ala Phe Glu Leu Trp Ala Lys Arg Asn Ile Lys Pro Val Pro
6485 6490 6495

Glu Ile Lys Ile Leu Asn Asn Leu Gly Val Asp Ile Ala Ala Asn Thr
6500 6505 6510

Val Ile Trp Asp Tyr Lys Arg Glu Ala Pro Ala His Val Ser Thr Ile
6515 6520 6525

Gly Val Cys Thr Met Thr Asp Ile Ala Lys Lys Pro Thr Glu Ser Ala
6530 6535 6540

Cys Ser Ser Leu Thr Val Leu Phe Asp Gly Arg Val Glu Gly Gln Val
6545 6550 6555 6560

Asp Leu Phe Arg Asn Ala Arg Asn Gly Val Leu Ile Thr Glu Gly Ser
6565 6570 6575

Val Lys Gly Leu Thr Pro Ser Lys Gly Pro Ala Gln Ala Ser Val Asn
6580 6585 6590

Gly Val Thr Leu Ile Gly Glu Ser Val Lys Thr Gln Phe Asn Tyr Phe
6595 6600 6605

Lys Lys Val Asp Gly Ile Ile Gln Gln Leu Pro Glu Thr Tyr Phe Thr
6610 6615 6620

Gln Ser Arg Asp Leu Glu Asp Phe Lys Pro Arg Ser Gln Met Glu Thr
6625 6630 6635 6640

Asp Phe Leu Glu Leu Ala Met Asp Glu Phe Ile Gln Arg Tyr Lys Leu
6645 6650 6655

Glu Gly Tyr Ala Phe Glu His Ile Val Tyr Gly Asp Phe Ser His Gly
6660 6665 6670

Gln Leu Gly Gly Leu His Leu Met Ile Gly Leu Ala Lys Arg Ser Gln
6675 6680 6685

Asp Ser Pro Leu Lys Leu Glu Asp Phe Ile Pro Met Asp Ser Thr Val
6690 6695 6700

Lys Asn Tyr Phe Ile Thr Asp Ala Gln Thr Gly Ser Ser Lys Cys Val
6705 6710 6715 6720

Cys Ser Val Ile Asp Leu Leu Leu Asp Asp Phe Val Glu Ile Ile Lys
6725 6730 6735

SEQLIST-20480.TXT

Ser Gln Asp Leu Ser Val Ile Ser Lys Val Val Lys Val Thr Ile Asp
6740 6745 6750

Tyr Ala Glu Ile Ser Phe Met Leu Trp Cys Lys Asp Gly His Val Glu
6755 6760 6765

Thr Phe Tyr Pro Lys Leu Gln Ala Ser Arg Ala Trp Gln Pro Gly Val
6770 6775 6780

Ala Met Pro Asn Leu Tyr Lys Met Gln Arg Met Leu Leu Glu Lys Cys
6785 6790 6795 6800

Asp Leu Gln Asn Tyr Gly Glu Asn Ala Val Ile Pro Lys Gly Ile Met
6805 6810 6815

Met Asn Val Ala Lys Tyr Thr Gln Leu Cys Gln Tyr Leu Asn Thr Leu
6820 6825 6830

Thr Leu Ala Val Pro Tyr Asn Met Arg Val Ile His Phe Gly Ala Gly
6835 6840 6845

Ser Asp Lys Gly Val Ala Pro Gly Thr Ala Val Leu Arg Gln Trp Leu
6850 6855 6860

Pro Thr Gly Thr Leu Leu Val Asp Ser Asp Leu Asn Asp Phe Val Ser
6865 6870 6875 6880

Asp Ala Tyr Ser Thr Leu Ile Gly Asp Cys Ala Thr Val His Thr Ala
6885 6890 6895

Asn Lys Trp Asp Leu Ile Ile Ser Asp Met Tyr Asp Pro Arg Thr Lys
6900 6905 6910

His Val Thr Lys Glu Asn Asp Ser Lys Glu Gly Phe Phe Thr Tyr Leu
6915 6920 6925

Cys Gly Phe Ile Lys Gln Lys Leu Ala Leu Gly Gly Ser Ile Ala Val
6930 6935 6940

Lys Ile Thr Glu His Ser Trp Asn Ala Asp Leu Tyr Lys Leu Met Gly
6945 6950 6955 6960

His Phe Ser Trp Trp Thr Ala Phe Val Thr Asn Val Asn Ala Ser Ser
6965 6970 6975

Ser Glu Ala Phe Leu Ile Gly Ala Asn Tyr Leu Gly Lys Pro Lys Glu
6980 6985 6990

Gln Ile Asp Gly Tyr Thr Met His Ala Asn Tyr Ile Phe Trp Arg Asn
6995 7000 7005

Thr Asn Pro Ile Gln Leu Ser Ser Tyr Ser Leu Phe Asp Met Ser Lys
7010 7015 7020

Phe Pro Leu Lys Leu Arg Gly Thr Ala Val Met Ser Leu Lys Glu Asn
7025 7030 7035 7040

Gln Ile Asn Asp Met Ile Tyr Ser Leu Leu Glu Lys Gly Arg Leu Ile
7045 7050 7055

Ile Arg Glu Asn Asn Arg Val Val Val Ser Ser Asp Ile Leu Val Asn
7060 7065 7070

SEQLIST-20480.TXT

Asn

<210> 7233
 <211> 4375
 <212> PRT
 <213> SARS coronavirus

<400> 7233
 Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
 1 5 10 15
 Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val Arg Gly Phe Gly
 20 25 30
 Asp Ser Val Glu Glu Ala Leu Ser Glu Ala Arg Glu His Leu Lys Asn
 35 40 45
 Gly Thr Cys Gly Leu Val Glu Leu Glu Lys Gly Val Leu Pro Gln Leu
 50 55 60
 Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Leu Ser Thr Asn
 65 70 75 80
 His Gly His Lys Val Val Glu Leu Val Ala Glu Met Asp Gly Ile Gln
 85 90 95
 Tyr Gly Arg Ser Gly Ile Thr Leu Gly Val Leu Val Pro His Val Gly
 100 105 110
 Glu Thr Pro Ile Ala Tyr Arg Asn Val Leu Leu Arg Lys Asn Gly Asn
 115 120 125
 Lys Gly Ala Gly Gly His Ser Tyr Gly Ile Asp Leu Lys Ser Tyr Asp
 130 135 140
 Leu Gly Asp Glu Leu Gly Thr Asp Pro Ile Glu Asp Tyr Glu Gln Asn
 145 150 155 160
 Trp Asn Thr Lys His Gly Ser Gly Ala Leu Arg Glu Leu Thr Arg Glu
 165 170 175
 Leu Asn Gly Gly Ala Val Thr Arg Tyr Val Asp Asn Asn Phe Cys Gly
 180 185 190
 Pro Asp Gly Tyr Pro Leu Asp Cys Ile Lys Asp Phe Leu Ala Arg Ala
 195 200 205
 Gly Lys Ser Met Cys Thr Leu Ser Glu Gln Leu Asp Tyr Ile Glu Ser
 210 215 220
 Lys Arg Gly Val Tyr Cys Cys Arg Asp His Glu His Glu Ile Ala Trp
 225 230 235 240
 Phe Thr Glu Arg Ser Asp Lys Ser Tyr Glu His Gln Thr Pro Phe Glu
 245 250 255
 Ile Lys Ser Ala Lys Lys Phe Asp Thr Phe Lys Gly Glu Cys Pro Lys
 260 265 270
 Phe Val Phe Pro Leu Asn Ser Lys Val Lys Val Ile Gln Pro Arg Val
 275 280 285

SEQLIST-20480.TXT

Glu Lys Lys Lys Thr Glu Gly Phe Met Gly Arg Ile Arg Ser Val Tyr
 290 295 300
 Pro Val Ala Ser Pro Gln Glu Cys Asn Asn Met His Leu Ser Thr Leu
 305 310 315 320
 Met Lys Cys Asn His Cys Asp Glu Val Ser Trp Gln Thr Cys Asp Phe
 325 330 335
 Leu Lys Ala Thr Cys Glu His Cys Gly Thr Glu Asn Leu Val Ile Glu
 340 345 350
 Gly Pro Thr Thr Cys Gly Tyr Leu Pro Thr Asn Ala Val Val Lys Met
 355 360 365
 Pro Cys Pro Ala Cys Gln Asp Pro Glu Ile Gly Pro Glu His Ser Val
 370 375 380
 Ala Asp Tyr His Asn His Ser Asn Ile Glu Thr Arg Leu Arg Lys Gly
 385 390 395 400
 Gly Arg Thr Arg Cys Phe Gly Gly Cys Val Phe Ala Tyr Val Gly Cys
 405 410 415
 Tyr Asn Lys Arg Ala Tyr Trp Val Pro Arg Ala Ser Ala Asp Ile Gly
 420 425 430
 Ser Gly His Thr Gly Ile Thr Gly Asp Asn Val Glu Thr Leu Asn Glu
 435 440 445
 Asp Leu Leu Glu Ile Leu Ser Arg Glu Arg Val Asn Ile Asn Ile Val
 450 455 460
 Gly Asp Phe His Leu Asn Glu Glu Val Ala Ile Ile Leu Ala Ser Phe
 465 470 475 480
 Ser Ala Ser Thr Ser Ala Phe Ile Asp Thr Ile Lys Ser Leu Asp Tyr
 485 490 495
 Lys Ser Phe Lys Thr Ile Val Glu Ser Cys Gly Asn Tyr Lys Val Thr
 500 505 510
 Lys Gly Lys Pro Val Lys Gly Ala Trp Asn Ile Gly Gln Gln Arg Ser
 515 520 525
 Val Leu Thr Pro Leu Cys Gly Phe Pro Ser Gln Ala Ala Gly Val Ile
 530 535 540
 Arg Ser Ile Phe Ala Arg Thr Leu Asp Ala Ala Asn His Ser Ile Pro
 545 550 555 560
 Asp Leu Gln Arg Ala Val Thr Ile Leu Asp Gly Ile Ser Glu Gln
 565 570 575
 Ser Leu Arg Leu Val Asp Ala Met Val Tyr Thr Ser Asp Leu Leu Thr
 580 585 590
 Asn Ser Val Ile Ile Met Ala Tyr Val Thr Gly Gly Leu Val Gln Gln
 595 600 605
 Thr Ser Gln Trp Leu Ser Asn Leu Leu Gly Thr Thr Val Glu Lys Leu
 610 615 620

SEQLIST-20480.TXT

Arg 625 Pro Ile Phe Glu 630 Trp Ile Glu Ala Lys Leu 635 Ser Ala Gly Val Glu 640
 Phe Leu Lys Asp 645 Ala Trp Glu Ile Leu Lys 650 Phe Leu Ile Thr Gly Val 655
 Phe Asp Ile Val 660 Lys Gly Gln Ile Gln Val Ala Ser Asp Asn Ile Lys 670
 Asp Cys Val 675 Lys Cys Phe Ile Asp 680 Val Val Asn Lys Ala Leu Glu Met 685
 Cys Ile Asp Gln Val Thr 695 Ile Ala Gly Ala Lys Leu 700 Arg Ser Leu Asn 705
 Leu Gly Glu Val Phe 710 Ile Ala Gln Ser Lys Gly 715 Leu Tyr Arg Gln Cys 720
 Ile Arg Gly Lys 725 Glu Gln Leu Gln Leu Leu 730 Met Pro Leu Lys Ala Pro 735
 Lys Glu Val Thr 740 Phe Leu Glu Gly Asp 745 Ser His Asp Thr Val Leu Thr 750
 Ser Glu Glu 755 Val Val Leu Lys Asn 760 Gly Glu Leu Glu Ala Leu Glu Thr 765
 Pro Val Asp Ser Phe Thr 775 Asn Gly Ala Ile Val Gly 780 Thr Pro Val Cys 785
 Val Asn Gly Leu Met 790 Leu Leu Glu Ile Lys Asp 795 Lys Glu Gln Tyr Cys 800
 Ala Leu Ser Pro 805 Gly Leu Leu Ala Thr Asn 810 Asn Val Phe Arg Leu Lys 815
 Gly Gly Ala Pro 820 Ile Lys Gly Val Thr 825 Phe Gly Glu Asp Thr Val Trp 830
 Glu Val Gln Gly Tyr Lys Asn 840 Val Arg Ile Thr Phe Glu Leu Asp Glu 845
 Arg Val Asp Lys Val Leu 855 Asn Glu Lys Cys Ser Val 860 Tyr Thr Val Glu 865
 Ser Gly Thr Glu Val Thr 870 Glu Phe Ala Cys Val 875 Val Ala Glu Ala Val 880
 Val Lys Thr Leu 885 Gln Pro Val Ser Asp Leu 890 Leu Thr Asn Met Gly Ile 895
 Asp Leu Asp Glu 900 Trp Ser Val Ala Thr 905 Phe Tyr Leu Phe Asp 910 Asp Ala 915
 Gly Glu Glu Asn Phe Ser Ser Arg 920 Met Tyr Cys Ser Phe Tyr Pro Pro 925
 Asp Glu Glu Glu Glu Asp 935 Asp Ala Glu Cys Glu Glu 940 Glu Glu Ile Asp 945
 Glu Thr Cys Glu His 950 Glu Tyr Gly Thr Glu Asp 955 Asp Tyr Gln Gly Leu 960

SEQLIST-20480.TXT

Pro Leu Glu Phe Gly Ala Ser Ala Glu Thr Val Arg Val Glu Glu Glu
965 970 975

Glu Glu Glu Asp Trp Leu Asp Asp Thr Thr Glu Gln Ser Glu Ile Glu
980 985 990

Pro Glu Pro Glu Pro Thr Pro Glu Glu Pro Val Asn Gln Phe Thr Gly
995 1000 1005

Tyr Leu Lys Leu Thr Asp Asn Val Ala Ile Lys Cys Val Asp Ile Val
1010 1015 1020

Lys Glu Ala Gln Ser Ala Asn Pro Met Val Ile Val Asn Ala Ala Asn
1025 1030 1035 1040

Ile His Leu Lys His Gly Gly Gly Val Ala Gly Ala Leu Asn Lys Ala
1045 1050 1055

Thr Asn Gly Ala Met Gln Lys Glu Ser Asp Asp Tyr Ile Lys Leu Asn
1060 1065 1070

Gly Pro Leu Thr Val Gly Gly Ser Cys Leu Leu Ser Gly His Asn Leu
1075 1080 1085

Ala Lys Lys Cys Leu His Val Val Gly Pro Asn Leu Asn Ala Gly Glu
1090 1095 1100

Asp Ile Gln Leu Leu Lys Ala Ala Tyr Glu Asn Phe Asn Ser Gln Asp
1105 1110 1115 1120

Ile Leu Leu Ala Pro Leu Leu Ser Ala Gly Ile Phe Gly Ala Lys Pro
1125 1130 1135

Leu Gln Ser Leu Gln Val Cys Val Gln Thr Val Arg Thr Gln Val Tyr
1140 1145 1150

Ile Ala Val Asn Asp Lys Ala Leu Tyr Glu Gln Val Val Met Asp Tyr
1155 1160 1165

Leu Asp Asn Leu Lys Pro Arg Val Glu Ala Pro Lys Gln Glu Glu Pro
1170 1175 1180

Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser Val Val Gln Lys
1185 1190 1195 1200

Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile Asp Glu Val Thr
1205 1210 1215

Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys Leu Leu Leu Phe
1220 1225 1230

Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln Asn Met Leu Arg
1235 1240 1245

Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro Tyr Met Val Gly
1250 1255 1260

Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val Ile Pro Ser Lys
1265 1270 1275 1280

Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala Leu Lys Lys Val
1285 1290 1295

SEQLIST-20480.TXT

Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln Gly Cys Ala Gly
1300 1305 1310

Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys Cys Lys Ser Ala
1315 1320 1325

Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys Glu Glu Ile Leu
1330 1335 1340

Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala His Ala Glu Glu
1345 1350 1355 1360

Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg Ala Ile Met Ala
1365 1370 1375

Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln Glu Gly Ile Val
1380 1385 1390

Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys Glu Pro Val Ala
1395 1400 1405

Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro Leu Val Thr Met
1410 1415 1420

Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu Glu Ala Ala Arg
1425 1430 1435 1440

Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser Val Ser Ser Pro
1445 1450 1455

Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser Ser Ser Lys Thr
1460 1465 1470

Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala Gly Ser Tyr Arg
1475 1480 1485

Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly Val Glu Phe Leu
1490 1495 1500

Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu Ser Pro Val Glu
1505 1510 1515 1520

Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys Leu Lys Ser Leu
1525 1530 1535

Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe Thr Thr Val Asp
1540 1545 1550

Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser Met Thr Tyr Gly
1555 1560 1565

Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp Val Thr Lys Ile
1570 1575 1580

Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe Val Leu Pro Ser
1585 1590 1595 1600

Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr His Thr Leu Asp
1605 1610 1615

Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn His Thr Lys Lys
1620 1625 1630

SEQLIST-20480.TXT

Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile Lys Trp Ala Asp
1635 1640 1645

Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu Gln Gln Leu Glu
1650 1655 1660

Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr Tyr Arg Ala Arg
1665 1670 1675 1680

Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu Ala Tyr Ser Asn
1685 1690 1695

Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr Met Thr His Leu
1700 1705 1710

Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val Leu Asn Val Val
1715 1720 1725

Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr Gly Val Glu Ala
1730 1735 1740

Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu Lys Thr Gly Val
1745 1750 1755 1760

Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln Tyr Leu Val Gln
1765 1770 1775

Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro Ala Glu Tyr Lys
1780 1785 1790

Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr Thr Gly Asn Tyr
1795 1800 1805

Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu Thr Leu Tyr Arg
1810 1815 1820

Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr Lys Gly Pro Val
1825 1830 1835 1840

Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr Thr Ile Lys Pro
1845 1850 1855

Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu Ile Glu Pro Lys
1860 1865 1870

Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr Thr Glu Gln Pro
1875 1880 1885

Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala Ser Phe Asp Asn
1890 1895 1900

Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp Asp Leu Asn Gln
1905 1910 1915 1920

Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu Ser Val Thr Phe
1925 1930 1935

Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp Tyr Arg His Tyr
1940 1945 1950

Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His Lys Pro Ile Val
1955 1960 1965

SEQLIST-20480.TXT

Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe Lys Pro Asn Thr
1970 1975 1980

Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val Asp Thr Ser Asn
1985 1990 2000

Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly Met Asp Asn Leu
2005 2010 2015

Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val Val Glu Asn Pro
2020 2025 2030

Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys Thr Thr Glu Val
2035 2040 2045

Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly Val Lys Val Thr
2050 2055 2060

Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr Val Glu Asn Thr
2065 2070 2075 2080

Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu Ala Leu Gly Leu
2085 2090 2095

Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn Ser Val Pro Trp
2100 2105 2110

Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly Gln Ala Ala Ile
2115 2120 2125

Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg Val Phe Asn Asn
2130 2135 2140

Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu Cys Thr Phe Thr
2145 2150 2155 2160

Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro Thr Thr Ile Ala
2165 2170 2175

Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu Asp Ala Gly Ile
2180 2185 2190

Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe Thr Ile Ala Met
2195 2200 2205

Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu Ile Cys Val Thr
2210 2215 2220

Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala Pro Ser Tyr Cys
2225 2230 2235 2240

Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn Val Thr Thr Met
2245 2250 2255

Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys Leu Ser Gly Leu
2260 2265 2270

Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile Gln Val Thr Ile
2275 2280 2285

Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu Ala Ala Glu Trp
2290 2295 2300

SEQLIST-20480.TXT

Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr Leu Leu Gly Leu
2305 2310 2315 2320

Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala Ser His Phe Ile
2325 2330 2335

Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile Val Gln Met Ala
2340 2345 2350

Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe Ala Ser Phe Tyr
2355 2360 2365

Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly Cys Thr Ser Ser
2370 2375 2380

Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr Arg Val Glu Cys
2385 2390 2395 2400

Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr Val Tyr Ala Asn
2405 2410 2415

Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn Cys Leu Asn Cys
2420 2425 2430

Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp Glu Val Ala Arg
2435 2440 2445

Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro Thr Asp Gln Ser
2450 2455 2460

Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly Ala Leu His Leu
2465 2470 2475 2480

Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg His Pro Leu Ser
2485 2490 2495

His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn Thr Lys Gly Ser
2500 2505 2510

Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser Lys Cys Asp Glu
2515 2520 2525

Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln Leu Met Cys Gln
2530 2535 2540

Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp Val Gly Asp Ser
2545 2550 2555 2560

Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val Asp Thr Phe Ser
2565 2570 2575

Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala Leu Val Ala Thr
2580 2585 2590

Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp Gly Val Leu Ser
2595 2600 2605

Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp Thr Asp Val Asp
2610 2615 2620

Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His His Ser Asp Leu
2625 2630 2635 2640

SEQLIST-20480.TXT

Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu Thr Tyr Asn Lys
 2645 2650 2655
 Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys Ile Asp Cys Asn
 2660 2665 2670
 Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His Asn Val Ser Leu
 2675 2680 2685
 Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu Gln Leu Arg Lys
 2690 2695 2700
 Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro Phe Arg Leu Thr
 2705 2710 2715 2720
 Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr Thr Lys Ile Ser
 2725 2730 2735
 Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys Leu Met Leu Lys
 2740 2745 2750
 Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys Tyr Ile Val Met
 2755 2760 2765
 Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr Asn Glu Ile Ile
 2770 2775 2780
 Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp Ile Ile Ser Thr
 2785 2790 2795 2800
 Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp Ala Trp Phe Ser
 2805 2810 2815
 Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys Pro Val Val Ala
 2820 2825 2830
 Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro Gly Leu Pro Gly
 2835 2840 2845
 Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His Phe Leu Pro Arg
 2850 2855 2860
 Val Phe Ser Ala Val Gly Asn Ile Cys Tyr Thr Pro Ser Lys Leu Ile
 2865 2870 2875 2880
 Glu Tyr Ser Asp Phe Ala Thr Ser Ala Cys Val Leu Ala Ala Glu Cys
 2885 2890 2895
 Thr Ile Phe Lys Asp Ala Met Gly Lys Pro Val Pro Tyr Cys Tyr Asp
 2900 2905 2910
 Thr Asn Leu Leu Glu Gly Ser Ile Ser Tyr Ser Glu Leu Arg Pro Asp
 2915 2920 2925
 Thr Arg Tyr Val Leu Met Asp Gly Ser Ile Ile Gln Phe Pro Asn Thr
 2930 2935 2940
 Tyr Leu Glu Gly Ser Val Arg Val Val Thr Thr Phe Asp Ala Glu Tyr
 2945 2950 2955 2960
 Cys Arg His Gly Thr Cys Glu Arg Ser Glu Val Gly Ile Cys Leu Ser
 2965 2970 2975

SEQLIST-20480.TXT

Thr Ser Gly Arg Trp Val Leu Asn Asn Glu His Tyr Arg Ala Leu Ser
2980 2985 2990

Gly Val Phe Cys Gly Val Asp Ala Met Asn Leu Ile Ala Asn Ile Phe
2995 3000 3005

Thr Pro Leu Val Gln Pro Val Gly Ala Leu Asp Val Ser Ala Ser Val
3010 3015 3020

Val Ala Gly Gly Ile Ile Ala Ile Leu Val Thr Cys Ala Ala Tyr Tyr
3025 3030 3035 3040

Phe Met Lys Phe Arg Arg Val Phe Gly Glu Tyr Asn His Val Val Ala
3045 3050 3055

Ala Asn Ala Leu Leu Phe Leu Met Ser Phe Thr Ile Leu Cys Leu Val
3060 3065 3070

Pro Ala Tyr Ser Phe Leu Pro Gly Val Tyr Ser Val Phe Tyr Leu Tyr
3075 3080 3085

Leu Thr Phe Tyr Phe Thr Asn Asp Val Ser Phe Leu Ala His Leu Gln
3090 3095 3100

Trp Phe Ala Met Phe Ser Pro Ile Val Pro Phe Trp Ile Thr Ala Ile
3105 3110 3115 3120

Tyr Val Phe Cys Ile Ser Leu Lys His Cys His Trp Phe Phe Asn Asn
3125 3130 3135

Tyr Leu Arg Lys Arg Val Met Phe Asn Gly Val Thr Phe Ser Thr Phe
3140 3145 3150

Glu Glu Ala Ala Leu Cys Thr Phe Leu Leu Asn Lys Glu Met Tyr Leu
3155 3160 3165

Lys Leu Arg Ser Glu Thr Leu Leu Pro Leu Thr Gln Tyr Asn Arg Tyr
3170 3175 3180

Leu Ala Leu Tyr Asn Lys Tyr Lys Tyr Phe Ser Gly Ala Leu Asp Thr
3185 3190 3195 3200

Thr Ser Tyr Arg Glu Ala Ala Cys Cys His Leu Ala Lys Ala Leu Asn
3205 3210 3215

Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln Pro Pro Gln Thr
3220 3225 3230

Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg Lys Met Ala Phe
3235 3240 3245

Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val Thr Cys Gly Thr
3250 3255 3260

Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val Tyr Cys Pro Arg
3265 3270 3275 3280

His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro Asn Tyr Glu Asp
3285 3290 3295

Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val Gln Ala Gly Asn
3300 3305 3310

SEQLIST-20480.TXT

Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn Cys Leu Leu Arg
3315 3320 3325

Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys Tyr Lys Phe Val
3330 3335 3340

Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala Cys Tyr Asn Gly
3345 3350 3355 3360

Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro Asn His Thr Ile
3365 3370 3375

Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val Gly Phe Asn Ile
3380 3385 3390

Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His Met Glu Leu Pro
3395 3400 3405

Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys Phe Tyr Gly Pro
3410 3415 3420

Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr Asp Thr Thr Ile
3425 3430 3435 3440

Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val Ile Asn Gly Asp
3445 3450 3455

Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn Asp Phe Asn Leu
3460 3465 3470

Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln Asp His Val Asp
3475 3480 3485

Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala Val Leu Asp Met
3490 3495 3500

Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met Asn Gly Arg Thr
3505 3510 3515 3520

Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr Pro Phe Asp Val
3525 3530 3535

Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys Phe Lys Lys Ile
3540 3545 3550

Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe Leu Thr Ser Leu
3555 3560 3565

Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe Phe Phe Val Tyr
3570 3575 3580

Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met Ala Ile Ala Ala
3585 3590 3595 3600

Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe Leu Cys Leu Phe
3605 3610 3615

Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn Met Val Tyr Met
3620 3625 3630

Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu Glu Leu Ala Asp
3635 3640 3645

SEQLIST-20480.TXT

Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val Met Tyr Ala Ser
3650 3655 3660

Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr Val Tyr Asp Asp
3665 3670 3675 3680

Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile Thr Leu Val Tyr
3685 3690 3695

Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile Ser Met Trp Ala
3700 3705 3710

Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val Val Thr Thr Ile
3715 3720 3725

Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val Glu Tyr Tyr Pro
3730 3735 3740

Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile Met Leu Val Tyr
3745 3750 3755 3760

Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly Leu Phe Cys Leu
3765 3770 3775

Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr Asp Tyr Leu Val
3780 3785 3790

Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly Leu Leu Pro Pro
3795 3800 3805

Lys Ser Ser Ile Asp Ala Phe Lys Leu Asn Ile Lys Leu Leu Gly Ile
3810 3815 3820

Gly Gly Lys Pro Cys Ile Lys Val Ala Thr Val Gln Ser Lys Met Ser
3825 3830 3835 3840

Asp Val Lys Cys Thr Ser Val Val Leu Leu Ser Val Leu Gln Gln Leu
3845 3850 3855

Arg Val Glu Ser Ser Ser Lys Leu Trp Ala Gln Cys Val Gln Leu His
3860 3865 3870

Asn Asp Ile Leu Leu Ala Lys Asp Thr Thr Glu Ala Phe Glu Lys Met
3875 3880 3885

Val Ser Leu Leu Ser Val Leu Leu Ser Met Gln Gly Ala Val Asp Ile
3890 3895 3900

Asn Arg Leu Cys Glu Glu Met Leu Asp Asn Arg Ala Thr Leu Gln Ala
3905 3910 3915 3920

Ile Ala Ser Glu Phe Ser Ser Leu Pro Ser Tyr Ala Ala Tyr Ala Thr
3925 3930 3935

Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala Asn Gly Asp Ser Glu Val
3940 3945 3950

Val Leu Lys Lys Leu Lys Lys Ser Leu Asn Val Ala Lys Ser Glu Phe
3955 3960 3965

Asp Arg Asp Ala Ala Met Gln Arg Lys Leu Glu Lys Met Ala Asp Gln
3970 3975 3980

SEQLIST-20480.TXT

Ala Met Thr Gln Met Tyr Lys Gln Ala Arg Ser Glu Asp Lys Arg Ala
3985 3990 3995 4000

Lys Val Thr Ser Ala Met Gln Thr Met Leu Phe Thr Met Leu Arg Lys
4005 4010 4015

Leu Asp Asn Asp Ala Leu Asn Asn Ile Ile Asn Asn Ala Arg Asp Gly
4020 4025 4030

Cys Val Pro Leu Asn Ile Ile Pro Leu Thr Thr Ala Ala Lys Leu Met
4035 4040 4045

Val Val Val Pro Asp Tyr Gly Thr Tyr Lys Asn Thr Cys Asp Gly Asn
4050 4055 4060

Thr Phe Thr Tyr Ala Ser Ala Leu Trp Glu Ile Gln Gln Val Val Asp
4065 4070 4075 4080

Ala Asp Ser Lys Ile Val Gln Leu Ser Glu Ile Asn Met Asp Asn Ser
4085 4090 4095

Pro Asn Leu Ala Trp Pro Leu Ile Val Thr Ala Leu Arg Ala Asn Ser
4100 4105 4110

Ala Val Lys Leu Gln Asn Asn Glu Leu Ser Pro Val Ala Leu Arg Gln
4115 4120 4125

Met Ser Cys Ala Ala Gly Thr Thr Gln Thr Ala Cys Thr Asp Asp Asn
4130 4135 4140

Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg Phe Val Leu Ala
4145 4150 4155 4160

Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg Phe Pro Lys Ser
4165 4170 4175

Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro Pro Cys Arg Phe
4180 4185 4190

Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr Leu Tyr Phe Ile
4195 4200 4205

Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu Gly Ser Leu Ala
4210 4215 4220

Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu Val Pro Ala Asn
4225 4230 4235 4240

Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp Pro Ala Lys Ala
4245 4250 4255

Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile Thr Asn Cys Val
4260 4265 4270

Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala Ile Thr Val Thr
4275 4280 4285

Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly Ala Ser Cys Cys
4290 4295 4300

Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro Lys Gly Phe Cys
4305 4310 4315 4320

SEQLIST-20480.TXT

Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr Cys Ala Asn Asp
4325 4330 4335

Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met
4340 4345 4350

Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met
4355 4360 4365

Gln Ser Ala Asp Ala Ser Thr
4370 4375

<210> 7234
<211> 2692
<212> PRT
<213> SARS coronavirus

<400> 7234
Gly Val Ser Ala Ala Arg Leu Thr Pro Cys Gly Thr Gly Thr Ser Thr
1 5 10 15

Asp Val Val Tyr Arg Ala Phe Asp Ile Tyr Asn Glu Lys Val Ala Gly
20 25 30

Phe Ala Lys Phe Leu Lys Thr Asn Cys Cys Arg Phe Gln Glu Lys Asp
35 40 45

Glu Glu Gly Asn Leu Leu Asp Ser Tyr Phe Val Val Lys Arg His Thr
50 55 60

Met Ser Asn Tyr Gln His Glu Glu Thr Ile Tyr Asn Leu Val Lys Asp
65 70 75 80

Cys Pro Ala Val Ala Val His Asp Phe Phe Lys Phe Arg Val Asp Gly
85 90 95

Asp Met Val Pro His Ile Ser Arg Gln Arg Leu Thr Lys Tyr Thr Met
100 105 110

Ala Asp Leu Val Tyr Ala Leu Arg His Phe Asp Glu Gly Asn Cys Asp
115 120 125

Thr Leu Lys Glu Ile Leu Val Thr Tyr Asn Cys Cys Asp Asp Asp Tyr
130 135 140

Phe Asn Lys Lys Asp Trp Tyr Asp Phe Val Glu Asn Pro Asp Ile Leu
145 150 155 160

Arg Val Tyr Ala Asn Leu Gly Glu Arg Val Arg Gln Ser Leu Leu Lys
165 170 175

Thr Val Gln Phe Cys Asp Ala Met Arg Asp Ala Gly Ile Val Gly Val
180 185 190

Leu Thr Leu Asp Asn Gln Asp Leu Asn Gly Asn Trp Tyr Asp Phe Gly
195 200 205

Asp Phe Val Gln Val Ala Pro Gly Cys Gly Val Pro Ile Val Asp Ser
210 215 220

Tyr Tyr Ser Leu Leu Met Pro Ile Leu Thr Leu Thr Arg Ala Leu Ala
225 230 235 240

SEQLIST-20480.TXT

Ala Glu Ser His Met 245 Asp Ala Asp Leu Ala 250 Lys Pro Leu Ile Lys 255 Trp
 Asp Leu Leu Lys 260 Tyr Asp Phe Thr Glu 265 Glu Arg Leu Cys Leu 270 Phe Asp
 Arg Tyr Phe 275 Lys Tyr Trp Asp Gln 280 Thr Tyr His Pro Asn 285 Cys Ile Asn
 Cys Leu 290 Asp Asp Arg Cys Ile 295 Leu His Cys Ala Asn 300 Phe Asn Val Leu
 Phe 305 Ser Thr Val Phe Pro 310 Pro Thr Ser Phe Gly 315 Pro Leu Val Arg Lys 320
 Ile Phe Val Asp Gly 325 Val Pro Phe Val Val 330 Ser Thr Gly Tyr His 335 Phe
 Arg Glu Leu Gly 340 Val Val His Asn Gln 345 Asp Val Asn Leu His 350 Ser Ser
 Arg Leu Ser 355 Phe Lys Glu Leu Leu 360 Val Tyr Ala Ala Asp 365 Pro Ala Met
 His Ala 370 Ala Ser Gly Asn Leu 375 Leu Leu Asp Lys Arg 380 Thr Thr Cys Phe
 Ser 385 Val Ala Ala Leu Thr 390 Asn Asn Val Ala Phe 395 Gln Thr Val Lys Pro 400
 Gly Asn Phe Asn Lys 405 Asp Phe Tyr Asp Phe 410 Ala Val Ser Lys Gly 415 Phe
 Phe Lys Glu Gly 420 Ser Ser Val Glu Leu 425 Lys His Phe Phe 430 Phe Ala Gln
 Asp Gly Asn 435 Ala Ala Ile Ser Asp 440 Tyr Asp Tyr Tyr Arg 445 Tyr Asn Leu
 Pro Thr 450 Met Cys Asp Ile Arg 455 Gln Leu Leu Phe Val 460 Val Glu Val Val
 Asp 465 Lys Tyr Phe Asp Cys 470 Tyr Asp Gly Gly Cys 475 Ile Asn Ala Asn Gln 480
 Val Ile Val Asn Asn 485 Leu Asp Lys Ser Ala 490 Gly Phe Pro Phe Asn 495 Lys
 Trp Gly Lys Ala 500 Arg Leu Tyr Tyr Asp 505 Ser Met Ser Tyr Glu 510 Asp Gln
 Asp Ala Leu 515 Phe Ala Tyr Thr Lys 520 Arg Asn Val Ile Pro 525 Thr Ile Thr
 Gln Met 530 Asn Leu Lys Tyr Ala 535 Ile Ser Ala Lys Asn 540 Arg Ala Arg Thr
 Val 545 Ala Gly Val Ser Ile 550 Cys Ser Thr Met Thr 555 Asn Arg Gln Phe His 560
 Gln Lys Leu Leu Lys 565 Ser Ile Ala Ala Thr 570 Arg Gly Ala Thr Val 575 Val

SEQLIST-20480.TXT

Ile Gly Thr Ser 580 Lys Phe Tyr Gly Gly 585 Trp His Asn Met Leu 590 Lys Thr
Val Tyr Ser 595 Asp Val Glu Thr Pro 600 His Leu Met Gly Trp 605 Asp Tyr Pro
Lys Cys 610 Asp Arg Ala Met Pro 615 Asn Met Leu Arg Ile 620 Met Ala Ser Leu
Val 625 Leu Ala Arg Lys His 630 Asn Thr Cys Cys Asn 635 Leu Ser His Arg Phe 640
Tyr Arg Leu Ala Asn 645 Glu Cys Ala Gln Val 650 Leu Ser Glu Met Val 655 Met
Cys Gly Gly Ser 660 Leu Tyr Val Lys Pro 665 Gly Gly Thr Ser Ser 670 Gly Asp
Ala Thr Thr 675 Ala Tyr Ala Asn Ser 680 Val Phe Asn Ile Cys 685 Gln Ala Val
Thr Ala 690 Asn Val Asn Ala Leu 695 Leu Ser Thr Asp Gly 700 Asn Lys Ile Ala
Asp 705 Lys Tyr Val Arg Asn 710 Leu Gln His Arg Leu 715 Tyr Glu Cys Leu Tyr 720
Arg Asn Arg Asp Val 725 Asp His Glu Phe Val 730 Asp Glu Phe Tyr Ala 735 Tyr
Leu Arg Lys His 740 Phe Ser Met Met Ile 745 Leu Ser Asp Asp Ala 750 Val Val
Cys Tyr Asn 755 Ser Asn Tyr Ala Ala 760 Gln Gly Leu Val Ala 765 Ser Ile Lys
Asn Phe 770 Lys Ala Val Leu Tyr 775 Tyr Gln Asn Asn Val 780 Phe Met Ser Glu
Ala 785 Lys Cys Trp Thr Glu 790 Thr Asp Leu Thr Lys 795 Gly Pro His Glu Phe 800
Cys Ser Gln His Thr 805 Met Leu Val Lys Gln 810 Gly Asp Asp Tyr Val 815 Tyr
Leu Pro Tyr Pro 820 Asp Pro Ser Arg Ile 825 Leu Gly Ala Gly Cys 830 Phe Val
Asp Asp Ile 835 Val Lys Thr Asp Gly 840 Thr Leu Met Ile Glu 845 Arg Phe Val
Ser Leu 850 Ala Ile Asp Ala Tyr 855 Pro Leu Thr Lys His 860 Pro Asn Gln Glu
Tyr 865 Ala Asp Val Phe His 870 Leu Tyr Leu Gln Tyr 875 Ile Arg Lys Leu His 880
Asp Glu Leu Thr Gly 885 His Met Leu Asp Met 890 Tyr Ser Val Met Leu 895 Thr
Asn Asp Asn Thr 900 Ser Arg Tyr Trp Glu 905 Pro Glu Phe Tyr Glu 910 Ala Met

SEQLIST-20480.TXT

Tyr Thr Pro His Thr Val Leu Gln Ala Val Gly Ala Cys Val Leu Cys
 915 920 925
 Asn Ser Gln Thr Ser Leu Arg Cys Gly Ala Cys Ile Arg Arg Pro Phe
 930 935 940
 Leu Cys Cys Lys Cys Cys Tyr Asp His Val Ile Ser Thr Ser His Lys
 945 950 955 960
 Leu Val Leu Ser Val Asn Pro Tyr Val Cys Asn Ala Pro Gly Cys Asp
 965 970 975
 Val Thr Asp Val Thr Gln Leu Tyr Leu Gly Gly Met Ser Tyr Tyr Cys
 980 985 990
 Lys Ser His Lys Pro Pro Ile Ser Phe Pro Leu Cys Ala Asn Gly Gln
 995 1000 1005
 Val Phe Gly Leu Tyr Lys Asn Thr Cys Val Gly Ser Asp Asn Val Thr
 1010 1015 1020
 Asp Phe Asn Ala Ile Ala Thr Cys Asp Trp Thr Asn Ala Gly Asp Tyr
 1025 1030 1035 1040
 Ile Leu Ala Asn Thr Cys Thr Glu Arg Leu Lys Leu Phe Ala Ala Glu
 1045 1050 1055
 Thr Leu Lys Ala Thr Glu Glu Thr Phe Lys Leu Ser Tyr Gly Ile Ala
 1060 1065 1070
 Thr Val Arg Glu Val Leu Ser Asp Arg Glu Leu His Leu Ser Trp Glu
 1075 1080 1085
 Val Gly Lys Pro Arg Pro Pro Leu Asn Arg Asn Tyr Val Phe Thr Gly
 1090 1095 1100
 Tyr Arg Val Thr Lys Asn Ser Lys Val Gln Ile Gly Glu Tyr Thr Phe
 1105 1110 1115 1120
 Glu Lys Gly Asp Tyr Gly Asp Ala Val Val Tyr Arg Gly Thr Thr Thr
 1125 1130 1135
 Tyr Lys Leu Asn Val Gly Asp Tyr Phe Val Leu Thr Ser His Thr Val
 1140 1145 1150
 Met Pro Leu Ser Ala Pro Thr Leu Val Pro Gln Glu His Tyr Val Arg
 1155 1160 1165
 Ile Thr Gly Leu Tyr Pro Thr Leu Asn Ile Ser Asp Glu Phe Ser Ser
 1170 1175 1180
 Asn Val Ala Asn Tyr Gln Lys Val Gly Met Gln Lys Tyr Ser Thr Leu
 1185 1190 1195 1200
 Gln Gly Pro Pro Gly Thr Gly Lys Ser His Phe Ala Ile Gly Leu Ala
 1205 1210 1215
 Leu Tyr Tyr Pro Ser Ala Arg Ile Val Tyr Thr Ala Cys Ser His Ala
 1220 1225 1230
 Ala Val Asp Ala Leu Cys Glu Lys Ala Leu Lys Tyr Leu Pro Ile Asp
 1235 1240 1245

SEQLIST-20480.TXT

Lys Cys¹ Ser Arg Ile Ile Pro Ala Arg Ala Arg Val Glu Cys Phe Asp
1250 1255 1260

Lys Phe Lys Val Asn Ser Thr Leu Glu Gln Tyr Val Phe Cys Thr Val
1265 1270 1275 1280

Asn Ala Leu Pro Glu Thr Thr Ala Asp Ile Val Val Phe Asp Glu Ile
1285 1290 1295

Ser Met Ala Thr Asn Tyr Asp Leu Ser Val Val Asn Ala Arg Leu Arg
1300 1305 1310

Ala Lys His Tyr Val Tyr Ile Gly Asp Pro Ala Gln Leu Pro Ala Pro
1315 1320 1325

Arg Thr Leu Leu Thr Lys Gly Thr Leu Glu Pro Glu Tyr Phe Asn Ser
1330 1335 1340

Val Cys Arg Leu Met Lys Thr Ile Gly Pro Asp Met Phe Leu Gly Thr
1345 1350 1355 1360

Cys Arg Arg Cys Pro Ala Glu Ile Val Asp Thr Val Ser Ala Leu Val
1365 1370 1375

Tyr Asp Asn Lys Leu Lys Ala His Lys Asp Lys Ser Ala Gln Cys Phe
1380 1385 1390

Lys Met Phe Tyr Lys Gly Val Ile Thr His Asp Val Ser Ser Ala Ile
1395 1400 1405

Asn Arg Pro Gln Ile Gly Val Val Arg Glu Phe Leu Thr Arg Asn Pro
1410 1415 1420

Ala Trp Arg Lys Ala Val Phe Ile Ser Pro Tyr Asn Ser Gln Asn Ala
1425 1430 1435 1440

Val Ala Ser Lys Ile Leu Gly Leu Pro Thr Gln Thr Val Asp Ser Ser
1445 1450 1455

Gln Gly Ser Glu Tyr Asp Tyr Val Ile Phe Thr Gln Thr Thr Glu Thr
1460 1465 1470

Ala His Ser Cys Asn Val Asn Arg Phe Asn Val Ala Ile Thr Arg Ala
1475 1480 1485

Lys Ile Gly Ile Leu Cys Ile Met Ser Asp Arg Asp Leu Tyr Asp Lys
1490 1495 1500

Leu Gln Phe Thr Ser Leu Glu Ile Pro Arg Arg Asn Val Ala Thr Leu
1505 1510 1515 1520

Gln Ala Glu Asn Val Thr Gly Leu Phe Lys Asp Cys Ser Lys Ile Ile
1525 1530 1535

Thr Gly Leu His Pro Thr Gln Ala Pro Thr His Leu Ser Val Asp Ile
1540 1545 1550

Lys Phe Lys Thr Glu Gly Leu Cys Val Asp Ile Pro Gly Ile Pro Lys
1555 1560 1565

Asp Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly Phe Lys Met Asn
1570 1575 1580

SEQLIST-20480.TXT

Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr Arg Glu Glu Ala
 1585 1590 1595 1600
 Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val Glu Gly Cys His
 1605 1610 1615
 Ala Thr Arg Asp Ala Val Gly Thr Asn Leu Pro Leu Gln Leu Gly Phe
 1620 1625 1630
 Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly Tyr Val Asp Thr
 1635 1640 1645
 Glu Asn Asn Thr Glu Phe Thr Arg Val Asn Ala Lys Pro Pro Pro Gly
 1650 1655 1660
 Asp Gln Phe Lys His Leu Ile Pro Leu Met Tyr Lys Gly Leu Pro Trp
 1665 1670 1675 1680
 Asn Val Val Arg Ile Lys Ile Val Gln Met Leu Ser Asp Thr Leu Lys
 1685 1690 1695
 Gly Leu Ser Asp Arg Val Val Phe Val Leu Trp Ala His Gly Phe Glu
 1700 1705 1710
 Leu Thr Ser Met Lys Tyr Phe Val Lys Ile Gly Pro Glu Arg Thr Cys
 1715 1720 1725
 Cys Leu Cys Asp Lys Arg Ala Thr Cys Phe Ser Thr Ser Ser Asp Thr
 1730 1735 1740
 Tyr Ala Cys Trp Asn His Ser Val Gly Phe Asp Tyr Val Tyr Asn Pro
 1745 1750 1755 1760
 Phe Met Ile Asp Val Gln Gln Trp Gly Phe Thr Gly Asn Leu Gln Ser
 1765 1770 1775
 Asn His Asp Gln His Cys Gln Val His Gly Asn Ala His Val Ala Ser
 1780 1785 1790
 Cys Asp Ala Ile Met Thr Arg Cys Leu Ala Val His Glu Cys Phe Val
 1795 1800 1805
 Lys Arg Val Asp Trp Ser Val Glu Tyr Pro Ile Ile Gly Asp Glu Leu
 1810 1815 1820
 Arg Val Asn Ser Ala Cys Arg Lys Val Gln His Met Val Val Lys Ser
 1825 1830 1835 1840
 Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp Ile Gly Asn Pro
 1845 1850 1855
 Lys Ala Ile Lys Cys Val Pro Gln Ala Glu Val Glu Trp Lys Phe Tyr
 1860 1865 1870
 Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile Glu Glu Leu Phe
 1875 1880 1885
 Tyr Ser Tyr Ala Thr His His Asp Lys Phe Thr Asp Gly Val Cys Leu
 1890 1895 1900
 Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro Ala Asn Ala Ile Val Cys
 1905 1910 1915 1920

SEQLIST-20480.TXT

Arg Phe Asp Thr Arg Val Leu Ser Asn Leu Asn Leu Pro Gly Cys Asp
1925 1930 1935

Gly Gly Ser Leu Tyr Val Asn Lys His Ala Phe His Thr Pro Ala Phe
1940 1945 1950

Asp Lys Ser Ala Phe Thr Asn Leu Lys Gln Leu Pro Phe Phe Tyr Tyr
1955 1960 1965

Ser Asp Ser Pro Cys Glu Ser His Gly Lys Gln Val Val Ser Asp Ile
1970 1975 1980

Asp Tyr Val Pro Leu Lys Ser Ala Thr Cys Ile Thr Arg Cys Asn Leu
1985 1990 2000

Gly Gly Ala Val Cys Arg His His Ala Asn Glu Tyr Arg Gln Tyr Leu
2005 2010 2015

Asp Ala Tyr Asn Met Met Ile Ser Ala Gly Phe Ser Leu Trp Ile Tyr
2020 2025 2030

Lys Gln Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe Thr Arg Leu Gln
2035 2040 2045

Ser Leu Glu Asn Val Ala Tyr Asn Val Val Asn Lys Gly His Phe Asp
2050 2055 2060

Gly His Ala Gly Glu Ala Pro Val Ser Ile Ile Asn Asn Ala Val Tyr
2065 2070 2075 2080

Thr Lys Val Asp Gly Ile Asp Val Glu Ile Phe Glu Asn Lys Thr Thr
2085 2090 2095

Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys Arg Asn Ile Lys
2100 2105 2110

Pro Val Pro Glu Ile Lys Ile Leu Asn Asn Leu Gly Val Asp Ile Ala
2115 2120 2125

Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Glu Ala Pro Ala His Val
2130 2135 2140

Ser Thr Ile Gly Val Cys Thr Met Thr Asp Ile Ala Lys Lys Pro Thr
2145 2150 2155 2160

Glu Ser Ala Cys Ser Ser Leu Thr Val Leu Phe Asp Gly Arg Val Glu
2165 2170 2175

Gly Gln Val Asp Leu Phe Arg Asn Ala Arg Asn Gly Val Leu Ile Thr
2180 2185 2190

Glu Gly Ser Val Lys Gly Leu Thr Pro Ser Lys Gly Pro Ala Gln Ala
2195 2200 2205

Ser Val Asn Gly Val Thr Leu Ile Gly Glu Ser Val Lys Thr Gln Phe
2210 2215 2220

Asn Tyr Phe Lys Lys Val Asp Gly Ile Ile Gln Gln Leu Pro Glu Thr
2225 2230 2235 2240

Tyr Phe Thr Gln Ser Arg Asp Leu Glu Asp Phe Lys Pro Arg Ser Gln
2245 2250 2255

SEQLIST-20480.TXT

Met Glu Thr Asp Phe Leu Glu Leu Ala Met Asp Glu Phe Ile Gln Arg
2260 2265 2270

Tyr Lys Leu Glu Gly Tyr Ala Phe Glu His Ile Val Tyr Gly Asp Phe
2275 2280 2285

Ser His Gly Gln Leu Gly Gly Leu His Leu Met Ile Gly Leu Ala Lys
2290 2295 2300

Arg Ser Gln Asp Ser Pro Leu Lys Leu Glu Asp Phe Ile Pro Met Asp
2305 2310 2315 2320

Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln Thr Gly Ser Ser
2325 2330 2335

Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp Asp Phe Val Glu
2340 2345 2350

Ile Ile Lys Ser Gln Asp Leu Ser Val Ile Ser Lys Val Val Lys Val
2355 2360 2365

Thr Ile Asp Tyr Ala Glu Ile Ser Phe Met Leu Trp Cys Lys Asp Gly
2370 2375 2380

His Val Glu Thr Phe Tyr Pro Lys Leu Gln Ala Ser Arg Ala Trp Gln
2385 2390 2395 2400

Pro Gly Val Ala Met Pro Asn Leu Tyr Lys Met Gln Arg Met Leu Leu
2405 2410 2415

Glu Lys Cys Asp Leu Gln Asn Tyr Gly Glu Asn Ala Val Ile Pro Lys
2420 2425 2430

Gly Ile Met Met Asn Val Ala Lys Tyr Thr Gln Leu Cys Gln Tyr Leu
2435 2440 2445

Asn Thr Leu Thr Leu Ala Val Pro Tyr Asn Met Arg Val Ile His Phe
2450 2455 2460

Gly Ala Gly Ser Asp Lys Gly Val Ala Pro Gly Thr Ala Val Leu Arg
2465 2470 2475 2480

Gln Trp Leu Pro Thr Gly Thr Leu Leu Val Asp Ser Asp Leu Asn Asp
2485 2490 2495

Phe Val Ser Asp Ala Tyr Ser Thr Leu Ile Gly Asp Cys Ala Thr Val
2500 2505 2510

His Thr Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp Met Tyr Asp Pro
2515 2520 2525

Arg Thr Lys His Val Thr Lys Glu Asn Asp Ser Lys Glu Gly Phe Phe
2530 2535 2540

Thr Tyr Leu Cys Gly Phe Ile Lys Gln Lys Leu Ala Leu Gly Gly Ser
2545 2550 2555 2560

Ile Ala Val Lys Ile Thr Glu His Ser Trp Asn Ala Asp Leu Tyr Lys
2565 2570 2575

Leu Met Gly His Phe Ser Trp Trp Thr Ala Phe Val Thr Asn Val Asn
2580 2585 2590

SEQLIST-20480.TXT

Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Ala Asn Tyr Leu Gly Lys
 2595 2600 2605
 Pro Lys Glu Gln Ile Asp Gly Tyr Thr Met His Ala Asn Tyr Ile Phe
 2610 2615 2620
 Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser Ser Tyr Ser Leu Phe Asp
 2625 2630 2635 2640
 Met Ser Lys Phe Pro Leu Lys Leu Arg Gly Thr Ala Val Met Ser Leu
 2645 2650 2655
 Lys Glu Asn Gln Ile Asn Asp Met Ile Tyr Ser Leu Leu Glu Lys Gly
 2660 2665 2670
 Arg Leu Ile Ile Arg Glu Asn Asn Arg Val Val Val Ser Ser Asp Ile
 2675 2680 2685
 Leu Val Asn Asn
 2690

<210> 7235
 <211> 7068
 <212> PRT
 <213> SARS coronavirus
 <220>
 <221> misc_feature
 <222> 4376
 <223> Xaa is any amino acid

<400> 7235
 Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
 1 5 10 15
 Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val Arg Gly Phe Gly
 20 25 30
 Asp Ser Val Glu Glu Ala Leu Ser Glu Ala Arg Glu His Leu Lys Asn
 35 40 45
 Gly Thr Cys Gly Leu Val Glu Leu Glu Lys Gly Val Leu Pro Gln Leu
 50 55 60
 Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Leu Ser Thr Asn
 65 70 75 80
 His Gly His Lys Val Val Glu Leu Val Ala Glu Met Asp Gly Ile Gln
 85 90 95
 Tyr Gly Arg Ser Gly Ile Thr Leu Gly Val Leu Val Pro His Val Gly
 100 105 110
 Glu Thr Pro Ile Ala Tyr Arg Asn Val Leu Leu Arg Lys Asn Gly Asn
 115 120 125
 Lys Gly Ala Gly Gly His Ser Tyr Gly Ile Asp Leu Lys Ser Tyr Asp
 130 135 140
 Leu Gly Asp Glu Leu Gly Thr Asp Pro Ile Glu Asp Tyr Glu Gln Asn
 145 150 155 160
 Trp Asn Thr Lys His Gly Ser Gly Ala Leu Arg Glu Leu Thr Arg Glu

175

Page 1459

SEQLIST-20480.TXT

500															505															510														
Lys	Gly	Lys	Pro	Val	Lys	Gly	Ala	Trp	Asn	Ile	Gly	Gln	Gln	Arg	Ser																													
		515					520					525																																
Val	Leu	Thr	Pro	Leu	Cys	Gly	Phe	Pro	Ser	Gln	Ala	Ala	Gly	Val	Ile																													
	530					535					540																																	
Arg	Ser	Ile	Phe	Ala	Arg	Thr	Leu	Asp	Ala	Ala	Asn	His	Ser	Ile	Pro																													
545					550					555					560																													
Asp	Leu	Gln	Arg	Ala	Ala	Val	Thr	Ile	Leu	Asp	Gly	Ile	Ser	Glu	Gln																													
				565					570																																			
Ser	Leu	Arg	Leu	Val	Asp	Ala	Met	Val	Tyr	Thr	Ser	Asp	Leu	Leu	Thr																													
			580					585					590																															
Asn	Ser	Val	Ile	Ile	Met	Ala	Tyr	Val	Thr	Gly	Gly	Leu	Val	Gln	Gln																													
		595					600					605																																
Thr	Ser	Gln	Trp	Leu	Ser	Asn	Leu	Leu	Gly	Thr	Thr	Val	Glu	Lys	Leu																													
	610					615					620																																	
Arg	Pro	Ile	Phe	Glu	Trp	Ile	Glu	Ala	Lys	Leu	Ser	Ala	Gly	Val	Glu																													
625					630					635					640																													
Phe	Leu	Lys	Asp	Ala	Trp	Glu	Ile	Leu	Lys	Phe	Leu	Ile	Thr	Gly	Val																													
				645					650					655																														
Phe	Asp	Ile	Val	Lys	Gly	Gln	Ile	Gln	Val	Ala	Ser	Asp	Asn	Ile	Lys																													
			660					665					670																															
Asp	Cys	Val	Lys	Cys	Phe	Ile	Asp	Val	Val	Asn	Lys	Ala	Leu	Glu	Met																													
		675					680					685																																
Cys	Ile	Asp	Gln	Val	Thr	Ile	Ala	Gly	Ala	Lys	Leu	Arg	Ser	Leu	Asn																													
	690					695					700																																	
Leu	Gly	Glu	Val	Phe	Ile	Ala	Gln	Ser	Lys	Gly	Leu	Tyr	Arg	Gln	Cys																													
705				710					715					720																														
Ile	Arg	Gly	Lys	Glu	Gln	Leu	Gln	Leu	Leu	Met	Pro	Leu	Lys	Ala	Pro																													
				725					730					735																														
Lys	Glu	Val	Thr	Phe	Leu	Glu	Gly	Asp	Ser	His	Asp	Thr	Val	Leu	Thr																													
			740					745					750																															
Ser	Glu	Glu	Val	Val	Leu	Lys	Asn	Gly	Glu	Leu	Glu	Ala	Leu	Glu	Thr																													
		755					760					765																																
Pro	Val	Asp	Ser	Phe	Thr	Asn	Gly	Ala	Ile	Val	Gly	Thr	Pro	Val	Cys																													
	770					775					780																																	
Val	Asn	Gly	Leu	Met	Leu	Leu	Glu	Ile	Lys	Asp	Lys	Glu	Gln	Tyr	Cys																													
785					790					795				800																														
Ala	Leu	Ser	Pro	Gly	Leu	Leu	Ala	Thr	Asn	Asn	Val	Phe	Arg	Leu	Lys																													
				805					810					815																														
Gly	Gly	Ala	Pro	Ile	Lys	Gly	Val	Thr	Phe	Gly	Glu	Asp	Thr	Val	Trp																													
			820					825					830																															
Glu	Val	Gln	Gly	Tyr	Lys	Asn	Val	Arg	Ile	Thr	Phe	Glu	Leu	Asp	Glu																													

SEQLIST-20480.TXT

835	840	845
Arg Val Asp Lys Val Leu Asn Glu Lys Cys Ser Val Tyr Thr Val Glu		
850	855	860
Ser Gly Thr Glu Val Thr Glu Phe Ala Cys Val Val Ala Glu Ala Val		
865	870	875
Val Lys Thr Leu Gln Pro Val Ser Asp Leu Leu Thr Asn Met Gly Ile		
	885	890
Asp Leu Asp Glu Trp Ser Val Ala Thr Phe Tyr Leu Phe Asp Asp Ala		
	900	905
Gly Glu Glu Asn Phe Ser Ser Arg Met Tyr Cys Ser Phe Tyr Pro Pro		
	915	920
Asp Glu Glu Glu Glu Asp Asp Ala Glu Cys Glu Glu Glu Glu Ile Asp		
	930	935
Glu Thr Cys Glu His Glu Tyr Gly Thr Glu Asp Asp Tyr Gln Gly Leu		
	940	945
Pro Leu Glu Phe Gly Ala Ser Ala Glu Thr Val Arg Val Glu Glu Glu		
	950	955
Glu Glu Glu Asp Trp Leu Asp Asp Thr Thr Glu Gln Ser Glu Ile Glu		
	960	965
Pro Glu Pro Glu Pro Thr Pro Glu Glu Pro Val Asn Gln Phe Thr Gly		
	970	975
Tyr Leu Lys Leu Thr Asp Asn Val Ala Ile Lys Cys Val Asp Ile Val		
	980	985
Lys Glu Ala Gln Ser Ala Asn Pro Met Val Ile Val Asn Ala Ala Asn		
	990	995
Ile His Leu Lys His Gly Gly Gly Val Ala Gly Ala Leu Asn Lys Ala		
	1000	1005
Thr Asn Gly Ala Met Gln Lys Glu Ser Asp Asp Tyr Ile Lys Leu Asn		
	1010	1015
Gly Pro Leu Thr Val Gly Gly Ser Cys Leu Leu Ser Gly His Asn Leu		
	1020	1025
Ala Lys Lys Cys Leu His Val Val Gly Pro Asn Leu Asn Ala Gly Glu		
	1030	1035
Asp Ile Gln Leu Leu Lys Ala Ala Tyr Glu Asn Phe Asn Ser Gln Asp		
	1040	1045
Ile Leu Leu Ala Pro Leu Leu Ser Ala Gly Ile Phe Gly Ala Lys Pro		
	1050	1055
Leu Gln Ser Leu Gln Val Cys Val Gln Thr Val Arg Thr Gln Val Tyr		
	1060	1065
Ile Ala Val Asn Asp Lys Ala Leu Tyr Glu Gln Val Val Met Asp Tyr		
	1070	1075
Leu Asp Asn Leu Lys Pro Arg Val Glu Ala Pro Lys Gln Glu Glu Pro		
	1080	1085
	1090	1095
	1100	1105
	1110	1115
	1120	1125
	1130	1135
	1140	1145
	1150	1155
	1160	1165

SEQLIST-20480.TXT

1170 1175 1180
 Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser Val Val Gln Lys
 1185 1190 1195 1200
 Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile Asp Glu Val Thr
 1205 1210 1215
 Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys Leu Leu Leu Phe
 1220 1225 1230
 Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln Asn Met Leu Arg
 1235 1240 1245
 Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro Tyr Met Val Gly
 1250 1255 1260
 Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val Ile Pro Ser Lys
 1265 1270 1275 1280
 Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala Leu Lys Lys Val
 1285 1290 1295
 Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln Gly Cys Ala Gly
 1300 1305 1310
 Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys Cys Lys Ser Ala
 1315 1320 1325
 Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys Glu Glu Ile Leu
 1330 1335 1340
 Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala His Ala Glu Glu
 1345 1350 1355 1360
 Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg Ala Ile Met Ala
 1365 1370 1375
 Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln Glu Gly Ile Val
 1380 1385 1390
 Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys Glu Pro Val Ala
 1395 1400 1405
 Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro Leu Val Thr Met
 1410 1415 1420
 Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu Glu Ala Ala Arg
 1425 1430 1435 1440
 Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser Val Ser Ser Pro
 1445 1450 1455
 Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser Ser Ser Lys Thr
 1460 1465 1470
 Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala Gly Ser Tyr Arg
 1475 1480 1485
 Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly Val Glu Phe Leu
 1490 1495 1500
 Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu Ser Pro Val Glu

SEQLIST-20480.TXT

1505 1510 1515 1520
Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys Leu Lys Ser Leu
 1525 1530 1535
Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe Thr Thr Val Asp
 1540 1545 1550
Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser Met Thr Tyr Gly
 1555 1560 1565
Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp Val Thr Lys Ile
 1570 1575 1580
Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe Val Leu Pro Ser
1585 1590 1595 1600
Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr His Thr Leu Asp
 1605 1610 1615
Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn His Thr Lys Lys
 1620 1625 1630
Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile Lys Trp Ala Asp
 1635 1640 1645
Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu Gln Gln Leu Glu
 1650 1655 1660
Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr Tyr Arg Ala Arg
1665 1670 1675 1680
Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu Ala Tyr Ser Asn
 1685 1690 1695
Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr Met Thr His Leu
 1700 1705 1710
Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val Leu Asn Val Val
 1715 1720 1725
Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr Gly Val Glu Ala
 1730 1735 1740
Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu Lys Thr Gly Val
1745 1750 1755 1760
Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln Tyr Leu Val Gln
 1765 1770 1775
Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro Ala Glu Tyr Lys
 1780 1785 1790
Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr Thr Gly Asn Tyr
 1795 1800 1805
Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu Thr Leu Tyr Arg
 1810 1815 1820
Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr Lys Gly Pro Val
1825 1830 1835 1840
Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr Thr Ile Lys Pro

SEQLIST-20480.TXT

1845	1850	1855
Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu Ile Glu Pro Lys	1860	1870
Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr Thr Glu Gln Pro	1875	1885
Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala Ser Phe Asp Asn	1890	1900
Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp Asp Leu Asn Gln	1905	1915
Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu Ser Val Thr Phe	1925	1935
Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp Tyr Arg His Tyr	1940	1950
Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His Lys Pro Ile Val	1955	1965
Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe Lys Pro Asn Thr	1970	1980
Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val Asp Thr Ser Asn	1985	1995
Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly Met Asp Asn Leu	2005	2015
Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val Val Glu Asn Pro	2020	2030
Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys Thr Thr Glu Val	2035	2045
Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly Val Lys Val Thr	2050	2060
Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr Val Glu Asn Thr	2065	2075
Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu Ala Leu Gly Leu	2085	2095
Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn Ser Val Pro Trp	2100	2110
Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly Gln Ala Ala Ile	2115	2125
Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg Val Phe Asn Asn	2130	2140
Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu Cys Thr Phe Thr	2145	2155
Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro Thr Thr Ile Ala	2165	2175
Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu Asp Ala Gly Ile		

SEQLIST-20480.TXT

2180

2185

2190

Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe Thr Ile Ala Met
 2195 2200 2205
 Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu Ile Cys Val Thr
 2210 2215 2220
 Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala Pro Ser Tyr Cys
 2225 2230 2235 2240
 Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn Val Thr Thr Met
 2245 2250 2255
 Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys Leu Ser Gly Leu
 2260 2265 2270
 Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile Gln Val Thr Ile
 2275 2280 2285
 Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu Ala Ala Glu Trp
 2290 2295 2300
 Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr Leu Leu Gly Leu
 2305 2310 2315 2320
 Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala Ser His Phe Ile
 2325 2330 2335
 Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile Val Gln Met Ala
 2340 2345 2350
 Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe Ala Ser Phe Tyr
 2355 2360 2365
 Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly Cys Thr Ser Ser
 2370 2375 2380
 Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr Arg Val Glu Cys
 2385 2390 2395 2400
 Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr Val Tyr Ala Asn
 2405 2410 2415
 Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn Cys Leu Asn Cys
 2420 2425 2430
 Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp Glu Val Ala Arg
 2435 2440 2445
 Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro Thr Asp Gln Ser
 2450 2455 2460
 Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly Ala Leu His Leu
 2465 2470 2475 2480
 Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg His Pro Leu Ser
 2485 2490 2495
 His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn Thr Lys Gly Ser
 2500 2505 2510
 Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser Lys Cys Asp Glu

SEQLIST-20480.TXT

2515 2520 2525
 Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln Leu Met Cys Gln
 2530 2535 2540
 Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp Val Gly Asp Ser
 2545 2550 2555 2560
 Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val Asp Thr Phe Ser
 2565 2570 2575
 Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala Leu Val Ala Thr
 2580 2585 2590
 Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp Gly Val Leu Ser
 2595 2600 2605
 Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp Thr Asp Val Asp
 2610 2615 2620
 Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His His Ser Asp Leu
 2625 2630 2635 2640
 Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu Thr Tyr Asn Lys
 2645 2650 2655
 Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys Ile Asp Cys Asn
 2660 2665 2670
 Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His Asn Val Ser Leu
 2675 2680 2685
 Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu Gln Leu Arg Lys
 2690 2695 2700
 Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro Phe Arg Leu Thr
 2705 2710 2715 2720
 Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr Thr Lys Ile Ser
 2725 2730 2735
 Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys Leu Met Leu Lys
 2740 2745 2750
 Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys Tyr Ile Val Met
 2755 2760 2765
 Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr Asn Glu Ile Ile
 2770 2775 2780
 Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp Ile Ile Ser Thr
 2785 2790 2795 2800
 Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp Ala Trp Phe Ser
 2805 2810 2815
 Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys Pro Val Val Ala
 2820 2825 2830
 Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro Gly Leu Pro Gly
 2835 2840 2845
 Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His Phe Leu Pro Arg

SEQLIST-20480.TXT

2850		2855		2860	
Val Phe Ser Ala Val	Gly Asn Ile Cys Tyr Thr	Pro Ser Lys Leu Ile			
2865	2870	2875			2880
Glu Tyr Ser Asp Phe	Ala Thr Ser Ala Cys Val	Leu Ala Ala Glu Cys			
	2885	2890			2895
Thr Ile Phe Lys	Asp Ala Met Gly Lys	Pro Val Pro Tyr Cys Tyr Asp			
	2900	2905			2910
Thr Asn Leu Leu Glu Gly Ser	Ile Ser Tyr Ser Glu	Leu Arg Pro Asp			
	2915	2920			2925
Thr Arg Tyr Val Leu Met	Asp Gly Ser Ile Ile Gln	Phe Pro Asn Thr			
	2930	2935			2940
Tyr Leu Glu Gly Ser Val	Arg Val Val Thr Thr	Phe Asp Ala Glu Tyr			
	2945	2950			2955
Cys Arg His Gly Thr	Cys Glu Arg Ser Glu	Val Gly Ile Cys Leu Ser			
	2965	2970			2975
Thr Ser Gly Arg Trp Val	Leu Asn Asn Glu His Tyr Arg	Ala Leu Ser			
	2980	2985			2990
Gly Val Phe Cys Gly Val	Asp Ala Met Asn Leu Ile	Ala Asn Ile Phe			
	2995	3000			3005
Thr Pro Leu Val Gln Pro	Val Gly Ala Leu Asp	Val Ser Ala Ser Val			
	3010	3015			3020
Val Ala Gly Gly Ile Ile	Ala Ile Leu Val Thr	Cys Ala Ala Tyr Tyr			
	3025	3030			3035
Phe Met Lys Phe Arg	Arg Val Phe Gly Glu Tyr	Asn His Val Val Ala			
	3045	3050			3055
Ala Asn Ala Leu Leu Phe	Leu Met Ser Phe Thr Ile	Leu Cys Leu Val			
	3060	3065			3070
Pro Ala Tyr Ser Phe Leu	Pro Gly Val Tyr Ser Val	Phe Tyr Leu Tyr			
	3075	3080			3085
Leu Thr Phe Tyr Phe Thr	Asn Asp Val Ser Phe	Leu Ala His Leu Gln			
	3090	3095			3100
Trp Phe Ala Met Phe Ser	Pro Ile Val Pro Phe Trp	Ile Thr Ala Ile			
	3105	3110			3115
Tyr Val Phe Cys Ile Ser	Leu Lys His Cys His Trp	Phe Phe Asn Asn			
	3125	3130			3135
Tyr Leu Arg Lys Arg Val	Met Phe Asn Gly Val Thr	Phe Ser Thr Phe			
	3140	3145			3150
Glu Glu Ala Ala Leu Cys	Thr Phe Leu Leu Asn Lys	Glu Met Tyr Leu			
	3155	3160			3165
Lys Leu Arg Ser Glu Thr	Leu Leu Pro Leu Thr Gln	Tyr Asn Arg Tyr			
	3170	3175			3180
Leu Ala Leu Tyr Asn Lys	Tyr Lys Tyr Phe Ser Gly	Ala Leu Asp Thr			

3185 3190 3195 3200

Thr Ser Tyr Arg Glu Ala Ala Cys Cys His Leu Ala Lys Ala Leu Asn
3205 3210 3215

Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln Pro Pro Gln Thr
3220 3225 3230

Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg Lys Met Ala Phe
3235 3240 3245

Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val Thr Cys Gly Thr
3250 3255 3260

Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val Tyr Cys Pro Arg
3265 3270 3275 3280

His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro Asn Tyr Glu Asp
3285 3290 3295

Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val Gln Ala Gly Asn
3300 3305 3310

Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn Cys Leu Leu Arg
3315 3320 3325

Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys Tyr Lys Phe Val
3330 3335 3340

Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala Cys Tyr Asn Gly
3345 3350 3355 3360

Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro Asn His Thr Ile
3365 3370 3375

Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val Gly Phe Asn Ile
3380 3385 3390

Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His Met Glu Leu Pro
3395 3400 3405

Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys Phe Tyr Gly Pro
3410 3415 3420

Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr Asp Thr Thr Ile
3425 3430 3435 3440

Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val Ile Asn Gly Asp
3445 3450 3455

Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn Asp Phe Asn Leu
3460 3465

Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln Asp His Val Asp
3475 3480 3485

Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala Val Leu Asp Met
3490 3495 3500

Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met Asn Gly Arg Thr
3505 3510 3515 3520

Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr Pro Phe Asp Val

SEQLIST-20480.TXT

3525		3530		3535
Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys Phe Lys Lys Ile	3540	3545	3550	
Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe Leu Thr Ser Leu	3555	3560	3565	
Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe Phe Phe Val Tyr	3570	3575	3580	
Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met Ala Ile Ala Ala	3585	3590	3595	3600
Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe Leu Cys Leu Phe	3605	3610	3615	
Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn Met Val Tyr Met	3620	3625	3630	
Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu Glu Leu Ala Asp	3635	3640	3645	
Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val Met Tyr Ala Ser	3650	3655	3660	
Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr Val Tyr Asp Asp	3665	3670	3675	3680
Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile Thr Leu Val Tyr	3685	3690	3695	
Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile Ser Met Trp Ala	3700	3705	3710	
Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val Val Thr Thr Ile	3715	3720	3725	
Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val Glu Tyr Tyr Pro	3730	3735	3740	
Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile Met Leu Val Tyr	3745	3750	3755	3760
Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly Leu Phe Cys Leu	3765	3770	3775	
Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr Asp Tyr Leu Val	3780	3785	3790	
Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly Leu Leu Pro Pro	3795	3800	3805	
Lys Ser Ser Ile Asp Ala Phe Lys Leu Asn Ile Lys Leu Leu Gly Ile	3810	3815	3820	
Gly Gly Lys Pro Cys Ile Lys Val Ala Thr Val Gln Ser Lys Met Ser	3825	3830	3835	3840
Asp Val Lys Cys Thr Ser Val Val Leu Leu Ser Val Leu Gln Gln Leu	3845	3850	3855	
Arg Val Glu Ser Ser Ser Lys Leu Trp Ala Gln Cys Val Gln Leu His				

SEQLIST-20480.TXT

3860 3865 3870
 Asn Asp Ile Leu Leu Ala Lys Asp Thr Thr Glu Ala Phe Glu Lys Met
 3875 3880 3885
 Val Ser Leu Leu Ser Val Leu Leu Ser Met Gln Gly Ala Val Asp Ile
 3890 3895 3900
 Asn Arg Leu Cys Glu Glu Met Leu Asp Asn Arg Ala Thr Leu Gln Ala
 3905 3910 3915 3920
 Ile Ala Ser Glu Phe Ser Ser Leu Pro Ser Tyr Ala Ala Tyr Ala Thr
 3925 3930 3935
 Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala Asn Gly Asp Ser Glu Val
 3940 3945 3950
 Val Leu Lys Lys Leu Lys Lys Ser Leu Asn Val Ala Lys Ser Glu Phe
 3955 3960 3965
 Asp Arg Asp Ala Ala Met Gln Arg Lys Leu Glu Lys Met Ala Asp Gln
 3970 3975 3980
 Ala Met Thr Gln Met Tyr Lys Gln Ala Arg Ser Glu Asp Lys Arg Ala
 3985 3990 3995 4000
 Lys Val Thr Ser Ala Met Gln Thr Met Leu Phe Thr Met Leu Arg Lys
 4005 4010 4015
 Leu Asp Asn Asp Ala Leu Asn Asn Ile Ile Asn Asn Ala Arg Asp Gly
 4020 4025 4030
 Cys Val Pro Leu Asn Ile Ile Pro Leu Thr Thr Ala Ala Lys Leu Met
 4035 4040 4045
 Val Val Val Pro Asp Tyr Gly Thr Tyr Lys Asn Thr Cys Asp Gly Asn
 4050 4055 4060
 Thr Phe Thr Tyr Ala Ser Ala Leu Trp Glu Ile Gln Gln Val Val Asp
 4065 4070 4075 4080
 Ala Asp Ser Lys Ile Val Gln Leu Ser Glu Ile Asn Met Asp Asn Ser
 4085 4090 4095
 Pro Asn Leu Ala Trp Pro Leu Ile Val Thr Ala Leu Arg Ala Asn Ser
 4100 4105 4110
 Ala Val Lys Leu Gln Asn Asn Glu Leu Ser Pro Val Ala Leu Arg Gln
 4115 4120 4125
 Met Ser Cys Ala Ala Gly Thr Thr Gln Thr Ala Cys Thr Asp Asp Asn
 4130 4135 4140
 Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg Phe Val Leu Ala
 4145 4150 4155 4160
 Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg Phe Pro Lys Ser
 4165 4170 4175
 Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro Pro Cys Arg Phe
 4180 4185 4190
 Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr Leu Tyr Phe Ile

SEQLIST-20480.TXT

4195	4200	4205
Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu Gly Ser Leu Ala		
4210	4215	4220
Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu Val Pro Ala Asn		
4225	4230	4235 4240
Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp Pro Ala Lys Ala		
4245	4250	4255
Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile Thr Asn Cys Val		
4260	4265	4270
Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala Ile Thr Val Thr		
4275	4280	4285
Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly Ala Ser Cys Cys		
4290	4295	4300
Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro Lys Gly Phe Cys		
4305	4310	4315 4320
Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr Cys Ala Asn Asp		
4325	4330	4335
Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met		
4340	4345	4350
Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met		
4355	4360	4365
Gln Ser Ala Asp Ala Ser Thr Xaa Gly Val Ser Ala Ala Arg Leu Thr		
4370	4375	4380
Pro Cys Gly Thr Gly Thr Ser Thr Asp Val Val Tyr Arg Ala Phe Asp		
4385	4390	4395 4400
Ile Tyr Asn Glu Lys Val Ala Gly Phe Ala Lys Phe Leu Lys Thr Asn		
4405	4410	4415
Cys Cys Arg Phe Gln Glu Lys Asp Glu Glu Gly Asn Leu Leu Asp Ser		
4420	4425	4430
Tyr Phe Val Val Lys Arg His Thr Met Ser Asn Tyr Gln His Glu Glu		
4435	4440	4445
Thr Ile Tyr Asn Leu Val Lys Asp Cys Pro Ala Val Ala Val His Asp		
4450	4455	4460
Phe Phe Lys Phe Arg Val Asp Gly Asp Met Val Pro His Ile Ser Arg		
4465	4470	4475 4480
Gln Arg Leu Thr Lys Tyr Thr Met Ala Asp Leu Val Tyr Ala Leu Arg		
4485	4490	4495
His Phe Asp Glu Gly Asn Cys Asp Thr Leu Lys Glu Ile Leu Val Thr		
4500	4505	4510
Tyr Asn Cys Cys Asp Asp Asp Tyr Phe Asn Lys Lys Asp Trp Tyr Asp		
4515	4520	4525
Phe Val Glu Asn Pro Asp Ile Leu Arg Val Tyr Ala Asn Leu Gly Glu		

SEQLIST-20480.TXT

4530 4535 4540
 Arg Val Arg Gln Ser Leu Leu Lys Thr Val Gln Phe Cys Asp Ala Met
 4545 4550 4555 4560
 Arg Asp Ala Gly Ile Val Gly Val Leu Thr Leu Asp Asn Gln Asp Leu
 4565 4570 4575
 Asn Gly Asn Trp Tyr Asp Phe Gly Asp Phe Val Gln Val Ala Pro Gly
 4580 4585 4590
 Cys Gly Val Pro Ile Val Asp Ser Tyr Tyr Ser Leu Leu Met Pro Ile
 4595 4600 4605
 Leu Thr Leu Thr Arg Ala Leu Ala Ala Glu Ser His Met Asp Ala Asp
 4610 4615 4620
 Leu Ala Lys Pro Leu Ile Lys Trp Asp Leu Leu Lys Tyr Asp Phe Thr
 4625 4630 4635 4640
 Glu Glu Arg Leu Cys Leu Phe Asp Arg Tyr Phe Lys Tyr Trp Asp Gln
 4645 4650 4655
 Thr Tyr His Pro Asn Cys Ile Asn Cys Leu Asp Asp Arg Cys Ile Leu
 4660 4665 4670
 His Cys Ala Asn Phe Asn Val Leu Phe Ser Thr Val Phe Pro Pro Thr
 4675 4680 4685
 Ser Phe Gly Pro Leu Val Arg Lys Ile Phe Val Asp Gly Val Pro Phe
 4690 4695 4700
 Val Val Ser Thr Gly Tyr His Phe Arg Glu Leu Gly Val Val His Asn
 4705 4710 4715 4720
 Gln Asp Val Asn Leu His Ser Ser Arg Leu Ser Phe Lys Glu Leu Leu
 4725 4730 4735
 Val Tyr Ala Ala Asp Pro Ala Met His Ala Ala Ser Gly Asn Leu Leu
 4740 4745 4750
 Leu Asp Lys Arg Thr Thr Cys Phe Ser Val Ala Ala Leu Thr Asn Asn
 4755 4760 4765
 Val Ala Phe Gln Thr Val Lys Pro Gly Asn Phe Asn Lys Asp Phe Tyr
 4770 4775 4780
 Asp Phe Ala Val Ser Lys Gly Phe Phe Lys Glu Gly Ser Ser Val Glu
 4785 4790 4795 4800
 Leu Lys His Phe Phe Phe Ala Gln Asp Gly Asn Ala Ala Ile Ser Asp
 4805 4810 4815
 Tyr Asp Tyr Tyr Arg Tyr Asn Leu Pro Thr Met Cys Asp Ile Arg Gln
 4820 4825 4830
 Leu Leu Phe Val Val Glu Val Val Asp Lys Tyr Phe Asp Cys Tyr Asp
 4835 4840 4845
 Gly Gly Cys Ile Asn Ala Asn Gln Val Ile Val Asn Asn Leu Asp Lys
 4850 4855 4860
 Ser Ala Gly Phe Pro Phe Asn Lys Trp Gly Lys Ala Arg Leu Tyr Tyr

SEQLIST-20480.TXT

4865 4870 4875 4880

Asp Ser Met Ser Tyr Glu Asp Gln Asp Ala Leu Phe Ala Tyr Thr Lys
 4885 4890 4895

Arg Asn Val Ile Pro Thr Ile Thr Gln Met Asn Leu Lys Tyr Ala Ile
 4900 4905 4910

Ser Ala Lys Asn Arg Ala Arg Thr Val Ala Gly Val Ser Ile Cys Ser
 4915 4920 4925

Thr Met Thr Asn Arg Gln Phe His Gln Lys Leu Leu Lys Ser Ile Ala
 4930 4935 4940

Ala Thr Arg Gly Ala Thr Val Val Ile Gly Thr Ser Lys Phe Tyr Gly
4945 4950 4955 4960

Gly Trp His Asn Met Leu Lys Thr Val Tyr Ser Asp Val Glu Thr Pro
 4965 4970 4975

His Leu Met Gly Trp Asp Tyr Pro Lys Cys Asp Arg Ala Met Pro Asn
 4980 4985 4990

Met Leu Arg Ile Met Ala Ser Leu Val Leu Ala Arg Lys His Asn Thr
 4995 5000 5005

Cys Cys Asn Leu Ser His Arg Phe Tyr Arg Leu Ala Asn Glu Cys Ala
5010 5015 5020

Gln Val Leu Ser Glu Met Val Met Cys Gly Gly Ser Leu Tyr Val Lys
5025 5030 5035 5040

Pro Gly Gly Thr Ser Ser Gly Asp Ala Thr Thr Ala Tyr Ala Asn Ser
 5045 5050 5055

Val Phe Asn Ile Cys Gln Ala Val Thr Ala Asn Val Asn Ala Leu Leu
 5060 5065 5070

Ser Thr Asp Gly Asn Lys Ile Ala Asp Lys Tyr Val Arg Asn Leu Gln
 5075 5080 5085

His Arg Leu Tyr Glu Cys Leu Tyr Arg Asn Arg Asp Val Asp His Glu
 5090 5095 5100

Phe Val Asp Glu Phe Tyr Ala Tyr Leu Arg Lys His Phe Ser Met Met
5105 5110 5115 5120

Ile Leu Ser Asp Asp Ala Val Val Cys Tyr Asn Ser Asn Tyr Ala Ala
 5125 5130 5135

Gln Gly Leu Val Ala Ser Ile Lys Asn Phe Lys Ala Val Leu Tyr Tyr
 5140 5145 5150

Gln Asn Asn Val Phe Met Ser Glu Ala Lys Cys Trp Thr Glu Thr Asp
 5155 5160 5165

Leu Thr Lys Gly Pro His Glu Phe Cys Ser Gln His Thr Met Leu Val
 5170 5175 5180

Lys Gln Gly Asp Asp Tyr Val Tyr Leu Pro Tyr Pro Asp Pro Ser Arg
5185 5190 5195 5200

Ile Leu Gly Ala Gly Cys Phe Val Asp Asp Ile Val Lys Thr Asp Gly

SEQLIST-20480.TXT

5205 Thr Leu Met Ile Glu Arg Phe Val Ser Leu Ala Ile Asp Ala Tyr Pro
 5220 5225 5230
 Leu Thr Lys His Pro Asn Gln Glu Tyr Ala Asp Val Phe His Leu Tyr
 5235 5240 5245
 Leu Gln Tyr Ile Arg Lys Leu His Asp Glu Leu Thr Gly His Met Leu
 5250 5255 5260
 Asp Met Tyr Ser Val Met Leu Thr Asn Asp Asn Thr Ser Arg Tyr Trp
 5265 5270 5275 5280
 Glu Pro Glu Phe Tyr Glu Ala Met Tyr Thr Pro His Thr Val Leu Gln
 5285 5290 5295
 Ala Val Gly Ala Cys Val Leu Cys Asn Ser Gln Thr Ser Leu Arg Cys
 5300 5305 5310
 Gly Ala Cys Ile Arg Arg Pro Phe Leu Cys Cys Lys Cys Cys Tyr Asp
 5315 5320 5325
 His Val Ile Ser Thr Ser His Lys Leu Val Leu Ser Val Asn Pro Tyr
 5330 5335 5340
 Val Cys Asn Ala Pro Gly Cys Asp Val Thr Asp Val Thr Gln Leu Tyr
 5345 5350 5355 5360
 Leu Gly Gly Met Ser Tyr Tyr Cys Lys Ser His Lys Pro Pro Ile Ser
 5365 5370 5375
 Phe Pro Leu Cys Ala Asn Gly Gln Val Phe Gly Leu Tyr Lys Asn Thr
 5380 5385 5390
 Cys Val Gly Ser Asp Asn Val Thr Asp Phe Asn Ala Ile Ala Thr Cys
 5395 5400 5405
 Asp Trp Thr Asn Ala Gly Asp Tyr Ile Leu Ala Asn Thr Cys Thr Glu
 5410 5415 5420
 Arg Leu Lys Leu Phe Ala Ala Glu Thr Leu Lys Ala Thr Glu Glu Thr
 5425 5430 5435 5440
 Phe Lys Leu Ser Tyr Gly Ile Ala Thr Val Arg Glu Val Leu Ser Asp
 5445 5450 5455
 Arg Glu Leu His Leu Ser Trp Glu Val Gly Lys Pro Arg Pro Pro Leu
 5460 5465 5470
 Asn Arg Asn Tyr Val Phe Thr Gly Tyr Arg Val Thr Lys Asn Ser Lys
 5475 5480 5485
 Val Gln Ile Gly Glu Tyr Thr Phe Glu Lys Gly Asp Tyr Gly Asp Ala
 5490 5495 5500
 Val Val Tyr Arg Gly Thr Thr Thr Tyr Lys Leu Asn Val Gly Asp Tyr
 5505 5510 5515 5520
 Phe Val Leu Thr Ser His Thr Val Met Pro Leu Ser Ala Pro Thr Leu
 5525 5530 5535
 Val Pro Gln Glu His Tyr Val Arg Ile Thr Gly Leu Tyr Pro Thr Leu

SEQLIST-20480.TXT

5540

5545

5550

Asn Ile Ser Asp Glu Phe Ser Ser Asn Val Ala Asn Tyr Gln Lys Val
5555 5560 5565
Gly Met Gln Lys Tyr Ser Thr Leu Gln Gly Pro Pro Gly Thr Gly Lys
5570 5575 5580
Ser His Phe Ala Ile Gly Leu Ala Leu Tyr Tyr Pro Ser Ala Arg Ile
5585 5590 5600
Val Tyr Thr Ala Cys Ser His Ala Ala Val Asp Ala Leu Cys Glu Lys
5605 5610 5615
Ala Leu Lys Tyr Leu Pro Ile Asp Lys Cys Ser Arg Ile Ile Pro Ala
5620 5625 5630
Arg Ala Arg Val Glu Cys Phe Asp Lys Phe Lys Val Asn Ser Thr Leu
5635 5640 5645
Glu Gln Tyr Val Phe Cys Thr Val Asn Ala Leu Pro Glu Thr Thr Ala
5650 5655 5660
Asp Ile Val Val Phe Asp Glu Ile Ser Met Ala Thr Asn Tyr Asp Leu
5665 5670 5675 5680
Ser Val Val Asn Ala Arg Leu Arg Ala Lys His Tyr Val Tyr Ile Gly
5685 5690 5695
Asp Pro Ala Gln Leu Pro Ala Pro Arg Thr Leu Leu Thr Lys Gly Thr
5700 5705 5710
Leu Glu Pro Glu Tyr Phe Asn Ser Val Cys Arg Leu Met Lys Thr Ile
5715 5720 5725
Gly Pro Asp Met Phe Leu Gly Thr Cys Arg Arg Cys Pro Ala Glu Ile
5730 5735 5740
Val Asp Thr Val Ser Ala Leu Val Tyr Asp Asn Lys Leu Lys Ala His
5745 5750 5755 5760
Lys Asp Lys Ser Ala Gln Cys Phe Lys Met Phe Tyr Lys Gly Val Ile
5765 5770 5775
Thr His Asp Val Ser Ser Ala Ile Asn Arg Pro Gln Ile Gly Val Val
5780 5785 5790
Arg Glu Phe Leu Thr Arg Asn Pro Ala Trp Arg Lys Ala Val Phe Ile
5795 5800 5805
Ser Pro Tyr Asn Ser Gln Asn Ala Val Ala Ser Lys Ile Leu Gly Leu
5810 5815 5820
Pro Thr Gln Thr Val Asp Ser Ser Gln Gly Ser Glu Tyr Asp Tyr Val
5825 5830 5835 5840
Ile Phe Thr Gln Thr Thr Glu Thr Ala His Ser Cys Asn Val Asn Arg
5845 5850 5855
Phe Asn Val Ala Ile Thr Arg Ala Lys Ile Gly Ile Leu Cys Ile Met
5860 5865 5870
Ser Asp Arg Asp Leu Tyr Asp Lys Leu Gln Phe Thr Ser Leu Glu Ile

SEQLIST-20480.TXT

5875 5880 5885
Pro Arg Arg Asn Val Ala Thr Leu Gln Ala Glu Asn Val Thr Gly Leu
5890 5895 5900
Phe Lys Asp Cys Ser Lys Ile Ile Thr Gly Leu His Pro Thr Gln Ala
5905 5910 5915 5920
Pro Thr His Leu Ser Val Asp Ile Lys Phe Lys Thr Glu Gly Leu Cys
5925 5930 5935
Val Asp Ile Pro Gly Ile Pro Lys Asp Met Thr Tyr Arg Arg Leu Ile
5940 5945 5950
Ser Met Met Gly Phe Lys Met Asn Tyr Gln Val Asn Gly Tyr Pro Asn
5955 5960 5965
Met Phe Ile Thr Arg Glu Glu Ala Ile Arg His Val Arg Ala Trp Ile
5970 5975 5980
Gly Phe Asp Val Glu Gly Cys His Ala Thr Arg Asp Ala Val Gly Thr
5985 5990 6000
Asn Leu Pro Leu Gln Leu Gly Phe Ser Thr Gly Val Asn Leu Val Ala
6005 6010 6015
Val Pro Thr Gly Tyr Val Asp Thr Glu Asn Asn Thr Glu Phe Thr Arg
6020 6025 6030
Val Asn Ala Lys Pro Pro Pro Gly Asp Gln Phe Lys His Leu Ile Pro
6035 6040 6045
Leu Met Tyr Lys Gly Leu Pro Trp Asn Val Val Arg Ile Lys Ile Val
6050 6055 6060
Gln Met Leu Ser Asp Thr Leu Lys Gly Leu Ser Asp Arg Val Val Phe
6065 6070 6075 6080
Val Leu Trp Ala His Gly Phe Glu Leu Thr Ser Met Lys Tyr Phe Val
6085 6090 6095
Lys Ile Gly Pro Glu Arg Thr Cys Cys Leu Cys Asp Lys Arg Ala Thr
6100 6105 6110
Cys Phe Ser Thr Ser Ser Asp Thr Tyr Ala Cys Trp Asn His Ser Val
6115 6120 6125
Gly Phe Asp Tyr Val Tyr Asn Pro Phe Met Ile Asp Val Gln Gln Trp
6130 6135 6140
Gly Phe Thr Gly Asn Leu Gln Ser Asn His Asp Gln His Cys Gln Val
6145 6150 6155 6160
His Gly Asn Ala His Val Ala Ser Cys Asp Ala Ile Met Thr Arg Cys
6165 6170 6175
Leu Ala Val His Glu Cys Phe Val Lys Arg Val Asp Trp Ser Val Glu
6180 6185 6190
Tyr Pro Ile Ile Gly Asp Glu Leu Arg Val Asn Ser Ala Cys Arg Lys
6195 6200 6205
Val Gln His Met Val Val Lys Ser Ala Leu Leu Ala Asp Lys Phe Pro

SEQLIST-20480.TXT

6210	6215	6220
Val Leu His Asp Ile	Gly Asn Pro Lys Ala Ile Lys Cys Val Pro Gln	
6225	6230	6235 6240
Ala Glu Val Glu Trp Lys Phe Tyr Asp	Ala Gln Pro Cys Ser Asp Lys	
	6245	6250 6255
Ala Tyr Lys Ile Glu Glu Leu Phe Tyr Ser Tyr Ala Thr His His Asp		
	6260	6265 6270
Lys Phe Thr Asp Gly Val Cys Leu Phe Trp Asn Cys Asn Val Asp Arg		
	6275	6280 6285
Tyr Pro Ala Asn Ala Ile Val Cys Arg Phe Asp Thr Arg Val Leu Ser		
	6290	6295 6300
Asn Leu Asn Leu Pro Gly Cys Asp Gly Gly Ser Leu Tyr Val Asn Lys		
6305	6310	6315 6320
His Ala Phe His Thr Pro Ala Phe Asp Lys Ser Ala Phe Thr Asn Leu		
	6325	6330 6335
Lys Gln Leu Pro Phe Phe Tyr Tyr Ser Asp Ser Pro Cys Glu Ser His		
	6340	6345 6350
Gly Lys Gln Val Val Ser Asp Ile Asp Tyr Val Pro Leu Lys Ser Ala		
	6355	6360 6365
Thr Cys Ile Thr Arg Cys Asn Leu Gly Gly Ala Val Cys Arg His His		
	6370	6375 6380
Ala Asn Glu Tyr Arg Gln Tyr Leu Asp Ala Tyr Asn Met Met Ile Ser		
6385	6390	6395 6400
Ala Gly Phe Ser Leu Trp Ile Tyr Lys Gln Phe Asp Thr Tyr Asn Leu		
	6405	6410 6415
Trp Asn Thr Phe Thr Arg Leu Gln Ser Leu Glu Asn Val Ala Tyr Asn		
	6420	6425 6430
Val Val Asn Lys Gly His Phe Asp Gly His Ala Gly Glu Ala Pro Val		
	6435	6440 6445
Ser Ile Ile Asn Asn Ala Val Tyr Thr Lys Val Asp Gly Ile Asp Val		
	6450	6455 6460
Glu Ile Phe Glu Asn Lys Thr Thr Leu Pro Val Asn Val Ala Phe Glu		
6465	6470	6475 6480
Leu Trp Ala Lys Arg Asn Ile Lys Pro Val Pro Glu Ile Lys Ile Leu		
	6485	6490 6495
Asn Asn Leu Gly Val Asp Ile Ala Ala Asn Thr Val Ile Trp Asp Tyr		
	6500	6505 6510
Lys Arg Glu Ala Pro Ala His Val Ser Thr Ile Gly Val Cys Thr Met		
	6515	6520 6525
Thr Asp Ile Ala Lys Lys Pro Thr Glu Ser Ala Cys Ser Ser Leu Thr		
	6530	6535 6540
Val Leu Phe Asp Gly Arg Val Glu Gly Gln Val Asp Leu Phe Arg Asn		

SEQLIST-20480.TXT

6545 6550 6555 6560
Ala Arg Asn Gly Val Leu Ile Thr Glu Gly Ser Val Lys Gly Leu Thr
 6565 6570 6575
Pro Ser Lys Gly Pro Ala Gln Ala Ser Val Asn Gly Val Thr Leu Ile
 6580 6585 6590
Gly Glu Ser Val Lys Thr Gln Phe Asn Tyr Phe Lys Lys Val Asp Gly
 6595 6600 6605
Ile Ile Gln Gln Leu Pro Glu Thr Tyr Phe Thr Gln Ser Arg Asp Leu
 6610 6615 6620
Glu Asp Phe Lys Pro Arg Ser Gln Met Glu Thr Asp Phe Leu Glu Leu
6625 6630 6635 6640
Ala Met Asp Glu Phe Ile Gln Arg Tyr Lys Leu Glu Gly Tyr Ala Phe
 6645 6650 6655
Glu His Ile Val Tyr Gly Asp Phe Ser His Gly Gln Leu Gly Gly Leu
 6660 6665 6670
His Leu Met Ile Gly Leu Ala Lys Arg Ser Gln Asp Ser Pro Leu Lys
 6675 6680 6685
Leu Glu Asp Phe Ile Pro Met Asp Ser Thr Val Lys Asn Tyr Phe Ile
6690 6695 6700
Thr Asp Ala Gln Thr Gly Ser Ser Lys Cys Val Cys Ser Val Ile Asp
6705 6710 6715 6720
Leu Leu Leu Asp Asp Phe Val Glu Ile Ile Lys Ser Gln Asp Leu Ser
 6725 6730 6735
Val Ile Ser Lys Val Val Lys Val Thr Ile Asp Tyr Ala Glu Ile Ser
 6740 6745 6750
Phe Met Leu Trp Cys Lys Asp Gly His Val Glu Thr Phe Tyr Pro Lys
 6755 6760 6765
Leu Gln Ala Ser Arg Ala Trp Gln Pro Gly Val Ala Met Pro Asn Leu
6770 6775 6780
Tyr Lys Met Gln Arg Met Leu Leu Glu Lys Cys Asp Leu Gln Asn Tyr
6785 6790 6795 6800
Gly Glu Asn Ala Val Ile Pro Lys Gly Ile Met Met Asn Val Ala Lys
 6805 6810 6815
Tyr Thr Gln Leu Cys Gln Tyr Leu Asn Thr Leu Thr Leu Ala Val Pro
 6820 6825 6830
Tyr Asn Met Arg Val Ile His Phe Gly Ala Gly Ser Asp Lys Gly Val
 6835 6840 6845
Ala Pro Gly Thr Ala Val Leu Arg Gln Trp Leu Pro Thr Gly Thr Leu
6850 6855 6860
Leu Val Asp Ser Asp Leu Asn Asp Phe Val Ser Asp Ala Tyr Ser Thr
6865 6870 6875 6880
Leu Ile Gly Asp Cys Ala Thr Val His Thr Ala Asn Lys Trp Asp Leu

SEQLIST-20480.TXT

6885

6890

6895

Ile Ile Ser Asp Met Tyr Asp Pro Arg Thr Lys His Val Thr Lys Glu
6900 6905 6910
Asn Asp Ser Lys Glu Gly Phe Phe Thr Tyr Leu Cys Gly Phe Ile Lys
6915 6920 6925
Gln Lys Leu Ala Leu Gly Gly Ser Ile Ala Val Lys Ile Thr Glu His
6930 6935 6940
Ser Trp Asn Ala Asp Leu Tyr Lys Leu Met Gly His Phe Ser Trp Trp
6945 6950 6955 6960
Thr Ala Phe Val Thr Asn Val Asn Ala Ser Ser Ser Glu Ala Phe Leu
6965 6970 6975
Ile Gly Ala Asn Tyr Leu Gly Lys Pro Lys Glu Gln Ile Asp Gly Tyr
6980 6985 6990
Thr Met His Ala Asn Tyr Ile Phe Trp Arg Asn Thr Asn Pro Ile Gln
6995 7000 7005
Leu Ser Ser Tyr Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys Leu
7010 7015 7020
Arg Gly Thr Ala Val Met Ser Leu Lys Glu Asn Gln Ile Asn Asp Met
7025 7030 7035 7040
Ile Tyr Ser Leu Leu Glu Lys Gly Arg Leu Ile Ile Arg Glu Asn Asn
7045 7050 7055
Arg Val Val Val Ser Ser Asp Ile Leu Val Asn Asn
7060 7065

<210> 7236
<211> 7069
<212> PRT
<213> SARS coronavirus
<220>
<221> misc_feature
<222> 4376...4377
<223> xaa is any amino acid

<400> 7236
Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
1 5 10 15
Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val Arg Gly Phe Gly
20 25 30
Asp Ser Val Glu Glu Ala Leu Ser Glu Ala Arg Glu His Leu Lys Asn
35 40 45
Gly Thr Cys Gly Leu Val Glu Leu Glu Lys Gly Val Leu Pro Gln Leu
50 55 60
Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Leu Ser Thr Asn
65 70 75 80
His Gly His Lys Val Val Glu Leu Val Ala Glu Met Asp Gly Ile Gln
85 90 95

SEQLIST-20480.TXT

Tyr Gly Arg Ser Gly Ile Thr Leu Gly Val Leu Val Pro His Val Gly
 100 105 110
 Glu Thr Pro Ile Ala Tyr Arg Asn Val Leu Leu Arg Lys Asn Gly Asn
 115 125
 Lys Gly Ala Gly Gly His Ser Tyr Gly Ile Asp Leu Lys Ser Tyr Asp
 130 135 140
 Leu Gly Asp Glu Leu Gly Thr Asp Pro Ile Glu Asp Tyr Glu Gln Asn
 145 150 155 160
 Trp Asn Thr Lys His Gly Ser Gly Ala Leu Arg Glu Leu Thr Arg Glu
 165 170 175
 Leu Asn Gly Gly Ala Val Thr Arg Tyr Val Asp Asn Asn Phe Cys Gly
 180 185 190
 Pro Asp Gly Tyr Pro Leu Asp Cys Ile Lys Asp Phe Leu Ala Arg Ala
 195 200 205
 Gly Lys Ser Met Cys Thr Leu Ser Glu Gln Leu Asp Tyr Ile Glu Ser
 210 215 220
 Lys Arg Gly Val Tyr Cys Cys Arg Asp His Glu His Glu Ile Ala Trp
 225 230 235 240
 Phe Thr Glu Arg Ser Asp Lys Ser Tyr Glu His Gln Thr Pro Phe Glu
 245 250 255
 Ile Lys Ser Ala Lys Lys Phe Asp Thr Phe Lys Gly Glu Cys Pro Lys
 260 265 270
 Phe Val Phe Pro Leu Asn Ser Lys Val Lys Val Ile Gln Pro Arg Val
 275 280 285
 Glu Lys Lys Lys Thr Glu Gly Phe Met Gly Arg Ile Arg Ser Val Tyr
 290 295 300
 Pro Val Ala Ser Pro Gln Glu Cys Asn Asn Met His Leu Ser Thr Leu
 305 310 315 320
 Met Lys Cys Asn His Cys Asp Glu Val Ser Trp Gln Thr Cys Asp Phe
 325 330 335
 Leu Lys Ala Thr Cys Glu His Cys Gly Thr Glu Asn Leu Val Ile Glu
 340 345 350
 Gly Pro Thr Thr Cys Gly Tyr Leu Pro Thr Asn Ala Val Val Lys Met
 355 360 365
 Pro Cys Pro Ala Cys Gln Asp Pro Glu Ile Gly Pro Glu His Ser Val
 370 375 380
 Ala Asp Tyr His Asn His Ser Asn Ile Glu Thr Arg Leu Arg Lys Gly
 385 390 395 400
 Gly Arg Thr Arg Cys Phe Gly Gly Cys Val Phe Ala Tyr Val Gly Cys
 405 410 415
 Tyr Asn Lys Arg Ala Tyr Trp Val Pro Arg Ala Ser Ala Asp Ile Gly
 420 425 430

SEQLIST-20480.TXT

Ser Gly His Thr Gly Ile Thr Gly Asp Asn Val Glu Thr Leu Asn Glu
435 440 445
Asp Leu Leu Glu Ile Leu Ser Arg Glu Arg Val Asn Ile Asn Ile Val
450 455 460
Gly Asp Phe His Leu Asn Glu Glu Val Ala Ile Ile Leu Ala Ser Phe
465 470 475 480
Ser Ala Ser Thr Ser Ala Phe Ile Asp Thr Ile Lys Ser Leu Asp Tyr
485 490 495
Lys Ser Phe Lys Thr Ile Val Glu Ser ys Gly Asn Tyr Lys Val Thr
500 505
Lys Gly Lys Pr Val Lys Gly Ala Trp Asn Ile Gly Gln Gln Arg Ser
510 515 520
Val Leu Thr Pr Leu ys Gly Phe Pr Ser Gln Ala Ala Gly Val Ile
525 530 535 540
Arg Ser Ile Phe Ala Arg Thr Leu Asp Ala Ala Asn His Ser Ile Pr
545 550 555 560
Asp Leu Gln Arg Ala Ala Val Thr Ile Leu Asp Gly Ile Ser Glu Gln
565 570 575
Ser Leu Arg Leu Val Asp Ala e Val Tyr Thr Ser Asp Leu Leu Thr
580 585 590
Asn Ser Val Ile Ile e Ala Tyr Val Thr Gly Gly Leu Val Gln Gln
600 605
Thr Ser Gln Trp Leu Ser Asn Leu Leu Gly Thr Thr Val Glu Lys Leu
610 615 620
Arg Pr Ile Phe Glu Trp Ile Glu Ala Lys Leu Ser Ala Gly Val Glu
625 630 635 640
Phe Leu Lys Asp Ala Trp Glu Ile Leu Lys Phe Leu Ile Thr Gly Val
645 650 655
Phe Asp Ile Val Lys Gly Gln Ile Gln Val Ala Ser Asp Asn Ile Lys
660 665 670
Asp ys Val Lys ys Phe Ile Asp Val Val Asn Lys Ala Leu Glu e
675 680 685
ys Ile Asp Gln Val Thr Ile Ala Gly Ala Lys Leu Arg Ser Leu Asn
690 695 700
Leu Gly Glu Val Phe Ile Ala Gln Ser Lys Gly Leu Tyr Arg Gln ys
705 710 715 720
Ile Arg Gly Lys Glu Gln Leu Gln Leu Leu e Pr Leu Lys Ala Pr
725 730 735
Lys Glu Val Thr Phe Leu Glu Gly Asp Ser His Asp Thr Val Leu Thr
740 745 750
Ser Glu Glu Val Val Leu Lys Asn Gly Glu Leu Glu Ala Leu Glu Thr
755 760 765

SEQLIST-20480.TXT

Pro Val Asp Ser Phe Thr Asn Gly Ala Ile Val Gly Thr Pro Val Cys
770 775 780

Val Asn Gly Leu Met Leu Leu Glu Ile Lys Asp Lys Glu Gln Tyr Cys
785 790 795

Ala Leu Ser Pro Gly Leu Leu Ala Thr Asn Asn Val Phe Arg Leu Lys
805 810 815

Gly Gly Ala Pro Ile Lys Gly Val Thr Phe Gly Glu Asp Thr Val Trp
820 825 830

Glu Val Gln Gly Tyr Lys Asn Val Arg Ile Thr Phe Glu Leu Asp Glu
835 840 845

Arg Val Asp Lys Val Leu Asn Glu Lys Cys Ser Val Tyr Thr Val Glu
850 855 860

Ser Gly Thr Glu Val Thr Glu Phe Ala Cys Val Val Ala Glu Ala Val
865 870 875 880

Val Lys Thr Leu Gln Pro Val Ser Asp Leu Leu Thr Asn Met Gly Ile
885 890 895

Asp Leu Asp Glu Trp Ser Val Ala Thr Phe Tyr Leu Phe Asp Asp Ala
900 905 910

Gly Glu Glu Asn Phe Ser Ser Arg Met Tyr Cys Ser Phe Tyr Pro Pro
915 920 925

Asp Glu Glu Glu Asp Asp Ala Glu Cys Glu Glu Glu Glu Ile Asp
930 935 940

Glu Thr Cys Glu His Glu Tyr Gly Thr Glu Asp Asp Tyr Gln Gly Leu
945 950 955 960

Pro Leu Glu Phe Gly Ala Ser Ala Glu Thr Val Arg Val Glu Glu Glu
965 970 975

Glu Glu Glu Asp Trp Leu Asp Asp Thr Thr Glu Gln Ser Glu Ile Glu
980 985 990

Pro Glu Pro Glu Pro Thr Pro Glu Glu Pro Val Asn Gln Phe Thr Gly
995 1000 1005

Tyr Leu Lys Leu Thr Asp Asn Val Ala Ile Lys Cys Val Asp Ile Val
1010 1015 1020

Lys Glu Ala Gln Ser Ala Asn Pro Met Val Ile Val Asn Ala Ala Asn
1025 1030 1035 1040

Ile His Leu Lys His Gly Gly Gly Val Ala Gly Ala Leu Asn Lys Ala
1045 1050 1055

Thr Asn Gly Ala Met Gln Lys Glu Ser Asp Asp Tyr Ile Lys Leu Asn
1060 1065 1070

Gly Pro Leu Thr Val Gly Gly Ser Cys Leu Leu Ser Gly His Asn Leu
1075 1080 1085

Ala Lys Lys Cys Leu His Val Val Gly Pro Asn Leu Asn Ala Gly Glu
1090 1095 1100

SEQLIST-20480.TXT

Asp Ile Gln Leu Leu Lys Ala Ala Tyr Glu Asn Phe Asn Ser Gln Asp
 1105 1110 1115 1120
 Ile Leu Leu Ala Pro Leu Leu Ser Ala Gly Ile Phe Gly Ala Lys Pro
 1125 1130 1135
 Leu Gln Ser Leu Gln Val Cys Val Gln Thr Val Arg Thr Gln Val Tyr
 1140 1145 1150
 Ile Ala Val Asn Asp Lys Ala Leu Tyr Glu Gln Val Val Met Asp Tyr
 1155 1160 1165
 Leu Asp Asn Leu Lys Pro Arg Val Glu Ala Pro Lys Gln Glu Glu Pro
 1170 1175 1180
 Pro Asn Thr Glu Asp Ser Lys Thr Glu Glu Lys Ser Val Val Gln Lys
 1185 1190 1195 1200
 Pro Val Asp Val Lys Pro Lys Ile Lys Ala Cys Ile Asp Glu Val Thr
 1205 1210 1215
 Thr Thr Leu Glu Glu Thr Lys Phe Leu Thr Asn Lys Leu Leu Leu Phe
 1220 1225 1230
 Ala Asp Ile Asn Gly Lys Leu Tyr His Asp Ser Gln Asn Met Leu Arg
 1235 1240 1245
 Gly Glu Asp Met Ser Phe Leu Glu Lys Asp Ala Pro Tyr Met Val Gly
 1250 1255 1260
 Asp Val Ile Thr Ser Gly Asp Ile Thr Cys Val Val Ile Pro Ser Lys
 1265 1270 1275 1280
 Lys Ala Gly Gly Thr Thr Glu Met Leu Ser Arg Ala Leu Lys Lys Val
 1285 1290 1295
 Pro Val Asp Glu Tyr Ile Thr Thr Tyr Pro Gly Gln Gly Cys Ala Gly
 1300 1305 1310
 Tyr Thr Leu Glu Glu Ala Lys Thr Ala Leu Lys Lys Cys Lys Ser Ala
 1315 1320 1325
 Phe Tyr Val Leu Pro Ser Glu Ala Pro Asn Ala Lys Glu Glu Ile Leu
 1330 1335 1340
 Gly Thr Val Ser Trp Asn Leu Arg Glu Met Leu Ala His Ala Glu Glu
 1345 1350 1355 1360
 Thr Arg Lys Leu Met Pro Ile Cys Met Asp Val Arg Ala Ile Met Ala
 1365 1370 1375
 Thr Ile Gln Arg Lys Tyr Lys Gly Ile Lys Ile Gln Glu Gly Ile Val
 1380 1385 1390
 Asp Tyr Gly Val Arg Phe Phe Phe Tyr Thr Ser Lys Glu Pro Val Ala
 1395 1400 1405
 Ser Ile Ile Thr Lys Leu Asn Ser Leu Asn Glu Pro Leu Val Thr Met
 1410 1415 1420
 Pro Ile Gly Tyr Val Thr His Gly Phe Asn Leu Glu Glu Ala Ala Arg
 1425 1430 1435 1440

SEQLIST-20480.TXT

Cys Met Arg Ser Leu Lys Ala Pro Ala Val Val Ser Val Ser Ser Pro
 1445 1450 1455
 Asp Ala Val Thr Thr Tyr Asn Gly Tyr Leu Thr Ser Ser Ser Lys Thr
 1460 1465 1470
 Ser Glu Glu His Phe Val Glu Thr Val Ser Leu Ala Gly Ser Tyr Arg
 1475 1480 1485
 Asp Trp Ser Tyr Ser Gly Gln Arg Thr Glu Leu Gly Val Glu Phe Leu
 1490 1495 1500
 Lys Arg Gly Asp Lys Ile Val Tyr His Thr Leu Glu Ser Pro Val Glu
 1505 1510 1515 1520
 Phe His Leu Asp Gly Glu Val Leu Ser Leu Asp Lys Leu Lys Ser Leu
 1525 1530 1535
 Leu Ser Leu Arg Glu Val Lys Thr Ile Lys Val Phe Thr Thr Val Asp
 1540 1545 1550
 Asn Thr Asn Leu His Thr Gln Leu Val Asp Met Ser Met Thr Tyr Gly
 1555 1560 1565
 Gln Gln Phe Gly Pro Thr Tyr Leu Asp Gly Ala Asp Val Thr Lys Ile
 1570 1575 1580
 Lys Pro His Val Asn His Glu Gly Lys Thr Phe Phe Val Leu Pro Ser
 1585 1590 1595 1600
 Asp Asp Thr Leu Arg Ser Glu Ala Phe Glu Tyr Tyr His Thr Leu Asp
 1605 1610 1615
 Glu Ser Phe Leu Gly Arg Tyr Met Ser Ala Leu Asn His Thr Lys Lys
 1620 1625 1630
 Trp Lys Phe Pro Gln Val Gly Gly Leu Thr Ser Ile Lys Trp Ala Asp
 1635 1640 1645
 Asn Asn Cys Tyr Leu Ser Ser Val Leu Leu Ala Leu Gln Gln Leu Glu
 1650 1655 1660
 Val Lys Phe Asn Ala Pro Ala Leu Gln Glu Ala Tyr Tyr Arg Ala Arg
 1665 1670 1675 1680
 Ala Gly Asp Ala Ala Asn Phe Cys Ala Leu Ile Leu Ala Tyr Ser Asn
 1685 1690 1695
 Lys Thr Val Gly Glu Leu Gly Asp Val Arg Glu Thr Met Thr His Leu
 1700 1705 1710
 Leu Gln His Ala Asn Leu Glu Ser Ala Lys Arg Val Leu Asn Val Val
 1715 1720 1725
 Cys Lys His Cys Gly Gln Lys Thr Thr Thr Leu Thr Gly Val Glu Ala
 1730 1735 1740
 Val Met Tyr Met Gly Thr Leu Ser Tyr Asp Asn Leu Lys Thr Gly Val
 1745 1750 1755 1760
 Ser Ile Pro Cys Val Cys Gly Arg Asp Ala Thr Gln Tyr Leu Val Gln
 1765 1770 1775

SEQLIST-20480.TXT

Gln Glu Ser Ser Phe Val Met Met Ser Ala Pro Pro Ala Glu Tyr Lys
1780 1785 1790

Leu Gln Gln Gly Thr Phe Leu Cys Ala Asn Glu Tyr Thr Gly Asn Tyr
1795 1800 1805

Gln Cys Gly His Tyr Thr His Ile Thr Ala Lys Glu Thr Leu Tyr Arg
1810 1815 1820

Ile Asp Gly Ala His Leu Thr Lys Met Ser Glu Tyr Lys Gly Pro Val
1825 1830 1835 1840

Thr Asp Val Phe Tyr Lys Glu Thr Ser Tyr Thr Thr Thr Ile Lys Pro
1845 1850 1855

Val Ser Tyr Lys Leu Asp Gly Val Thr Tyr Thr Glu Ile Glu Pro Lys
1860 1865 1870

Leu Asp Gly Tyr Tyr Lys Lys Asp Asn Ala Tyr Tyr Thr Glu Gln Pro
1875 1880 1885

Ile Asp Leu Val Pro Thr Gln Pro Leu Pro Asn Ala Ser Phe Asp Asn
1890 1895 1900

Phe Lys Leu Thr Cys Ser Asn Thr Lys Phe Ala Asp Asp Leu Asn Gln
1905 1910 1915 1920

Met Thr Gly Phe Thr Lys Pro Ala Ser Arg Glu Leu Ser Val Thr Phe
1925 1930 1935

Phe Pro Asp Leu Asn Gly Asp Val Val Ala Ile Asp Tyr Arg His Tyr
1940 1945 1950

Ser Ala Ser Phe Lys Lys Gly Ala Lys Leu Leu His Lys Pro Ile Val
1955 1960 1965

Trp His Ile Asn Gln Ala Thr Thr Lys Thr Thr Phe Lys Pro Asn Thr
1970 1975 1980

Trp Cys Leu Arg Cys Leu Trp Ser Thr Lys Pro Val Asp Thr Ser Asn
1985 1990 1995 2000

Ser Phe Glu Val Leu Ala Val Glu Asp Thr Gln Gly Met Asp Asn Leu
2005 2010 2015

Ala Cys Glu Ser Gln Gln Pro Thr Ser Glu Glu Val Val Glu Asn Pro
2020 2025 2030

Thr Ile Gln Lys Glu Val Ile Glu Cys Asp Val Lys Thr Thr Glu Val
2035 2040 2045

Val Gly Asn Val Ile Leu Lys Pro Ser Asp Glu Gly Val Lys Val Thr
2050 2055 2060

Gln Glu Leu Gly His Glu Asp Leu Met Ala Ala Tyr Val Glu Asn Thr
2065 2070 2075 2080

Ser Ile Thr Ile Lys Lys Pro Asn Glu Leu Ser Leu Ala Leu Gly Leu
2085 2090 2095

Lys Thr Ile Ala Thr His Gly Ile Ala Ala Ile Asn Ser Val Pro Trp
2100 2105 2110

SEQLIST-20480.TXT

Ser Lys Ile Leu Ala Tyr Val Lys Pro Phe Leu Gly Gln Ala Ala Ile
2115 2120 2125

Thr Thr Ser Asn Cys Ala Lys Arg Leu Ala Gln Arg Val Phe Asn Asn
2130 2135 2140

Tyr Met Pro Tyr Val Phe Thr Leu Leu Phe Gln Leu Cys Thr Phe Thr
2145 2150 2155 2160

Lys Ser Thr Asn Ser Arg Ile Arg Ala Ser Leu Pro Thr Thr Ile Ala
2165 2170 2175

Lys Asn Ser Val Lys Ser Val Ala Lys Leu Cys Leu Asp Ala Gly Ile
2180 2185 2190

Asn Tyr Val Lys Ser Pro Lys Phe Ser Lys Leu Phe Thr Ile Ala Met
2195 2200 2205

Trp Leu Leu Leu Leu Ser Ile Cys Leu Gly Ser Leu Ile Cys Val Thr
2210 2215 2220

Ala Ala Phe Gly Val Leu Leu Ser Asn Phe Gly Ala Pro Ser Tyr Cys
2225 2230 2235 2240

Asn Gly Val Arg Glu Leu Tyr Leu Asn Ser Ser Asn Val Thr Thr Met
2245 2250 2255

Asp Phe Cys Glu Gly Ser Phe Pro Cys Ser Ile Cys Leu Ser Gly Leu
2260 2265 2270

Asp Ser Leu Asp Ser Tyr Pro Ala Leu Glu Thr Ile Gln Val Thr Ile
2275 2280 2285

Ser Ser Tyr Lys Leu Asp Leu Thr Ile Leu Gly Leu Ala Ala Glu Trp
2290 2295 2300

Val Leu Ala Tyr Met Leu Phe Thr Lys Phe Phe Tyr Leu Leu Gly Leu
2305 2310 2315 2320

Ser Ala Ile Met Gln Val Phe Phe Gly Tyr Phe Ala Ser His Phe Ile
2325 2330 2335

Ser Asn Ser Trp Leu Met Trp Phe Ile Ile Ser Ile Val Gln Met Ala
2340 2345 2350

Pro Val Ser Ala Met Val Arg Met Tyr Ile Phe Phe Ala Ser Phe Tyr
2355 2360 2365

Tyr Ile Trp Lys Ser Tyr Val His Ile Met Asp Gly Cys Thr Ser Ser
2370 2375 2380

Thr Cys Met Met Cys Tyr Lys Arg Asn Arg Ala Thr Arg Val Glu Cys
2385 2390 2395 2400

Thr Thr Ile Val Asn Gly Met Lys Arg Ser Phe Tyr Val Tyr Ala Asn
2405 2410 2415

Gly Gly Arg Gly Phe Cys Lys Thr His Asn Trp Asn Cys Leu Asn Cys
2420 2425 2430

Asp Thr Phe Cys Thr Gly Ser Thr Phe Ile Ser Asp Glu Val Ala Arg
2435 2440 2445

SEQLIST-20480.TXT

Asp Leu Ser Leu Gln Phe Lys Arg Pro Ile Asn Pro Thr Asp Gln Ser
 2450 2455 2460
 Ser Tyr Ile Val Asp Ser Val Ala Val Lys Asn Gly Ala Leu His Leu
 2465 2470 2475 2480
 Tyr Phe Asp Lys Ala Gly Gln Lys Thr Tyr Glu Arg His Pro Leu Ser
 2485 2490 2495
 His Phe Val Asn Leu Asp Asn Leu Arg Ala Asn Asn Thr Lys Gly Ser
 2500 2505 2510
 Leu Pro Ile Asn Val Ile Val Phe Asp Gly Lys Ser Lys Cys Asp Glu
 2515 2520 2525
 Ser Ala Ser Lys Ser Ala Ser Val Tyr Tyr Ser Gln Leu Met Cys Gln
 2530 2535 2540
 Pro Ile Leu Leu Leu Asp Gln Ala Leu Val Ser Asp Val Gly Asp Ser
 2545 2550 2555 2560
 Thr Glu Val Ser Val Lys Met Phe Asp Ala Tyr Val Asp Thr Phe Ser
 2565 2570 2575
 Ala Thr Phe Ser Val Pro Met Glu Lys Leu Lys Ala Leu Val Ala Thr
 2580 2585 2590
 Ala His Ser Glu Leu Ala Lys Gly Val Ala Leu Asp Gly Val Leu Ser
 2595 2600 2605
 Thr Phe Val Ser Ala Ala Arg Gln Gly Val Val Asp Thr Asp Val Asp
 2610 2615 2620
 Thr Lys Asp Val Ile Glu Cys Leu Lys Leu Ser His His Ser Asp Leu
 2625 2630 2635 2640
 Glu Val Thr Gly Asp Ser Cys Asn Asn Phe Met Leu Thr Tyr Asn Lys
 2645 2650 2655
 Val Glu Asn Met Thr Pro Arg Asp Leu Gly Ala Cys Ile Asp Cys Asn
 2660 2665 2670
 Ala Arg His Ile Asn Ala Gln Val Ala Lys Ser His Asn Val Ser Leu
 2675 2680 2685
 Ile Trp Asn Val Lys Asp Tyr Met Ser Leu Ser Glu Gln Leu Arg Lys
 2690 2695 2700
 Gln Ile Arg Ser Ala Ala Lys Lys Asn Asn Ile Pro Phe Arg Leu Thr
 2705 2710 2715 2720
 Cys Ala Thr Thr Arg Gln Val Val Asn Val Ile Thr Thr Lys Ile Ser
 2725 2730 2735
 Leu Lys Gly Gly Lys Ile Val Ser Thr Cys Phe Lys Leu Met Leu Lys
 2740 2745 2750
 Ala Thr Leu Leu Cys Val Leu Ala Ala Leu Val Cys Tyr Ile Val Met
 2755 2760 2765
 Pro Val His Thr Leu Ser Ile His Asp Gly Tyr Thr Asn Glu Ile Ile
 2770 2775 2780

SEQLIST-20480.TXT

Gly Tyr Lys Ala Ile Gln Asp Gly Val Thr Arg Asp Ile Ile Ser Thr
 2785 2790 2795 2800
 Asp Asp Cys Phe Ala Asn Lys His Ala Gly Phe Asp Ala Trp Phe Ser
 2805 2810 2815
 Gln Arg Gly Gly Ser Tyr Lys Asn Asp Lys Ser Cys Pro Val Val Ala
 2820 2825 2830
 Ala Ile Ile Thr Arg Glu Ile Gly Phe Ile Val Pro Gly Leu Pro Gly
 2835 2840 2845
 Thr Val Leu Arg Ala Ile Asn Gly Asp Phe Leu His Phe Leu Pro Arg
 2850 2855 2860
 Val Phe Ser Ala Val Gly Asn Ile Cys Tyr Thr Pro Ser Lys Leu Ile
 2865 2870 2875 2880
 Glu Tyr Ser Asp Phe Ala Thr Ser Ala Cys Val Leu Ala Ala Glu Cys
 2885 2890 2895
 Thr Ile Phe Lys Asp Ala Met Gly Lys Pro Val Pro Tyr Cys Tyr Asp
 2900 2905 2910
 Thr Asn Leu Leu Glu Gly Ser Ile Ser Tyr Ser Glu Leu Arg Pro Asp
 2915 2920 2925
 Thr Arg Tyr Val Leu Met Asp Gly Ser Ile Ile Gln Phe Pro Asn Thr
 2930 2935 2940
 Tyr Leu Glu Gly Ser Val Arg Val Val Thr Thr Phe Asp Ala Glu Tyr
 2945 2950 2955 2960
 Cys Arg His Gly Thr Cys Glu Arg Ser Glu Val Gly Ile Cys Leu Ser
 2965 2970 2975
 Thr Ser Gly Arg Trp Val Leu Asn Asn Glu His Tyr Arg Ala Leu Ser
 2980 2985 2990
 Gly Val Phe Cys Gly Val Asp Ala Met Asn Leu Ile Ala Asn Ile Phe
 2995 3000 3005
 Thr Pro Leu Val Gln Pro Val Gly Ala Leu Asp Val Ser Ala Ser Val
 3010 3015 3020
 Val Ala Gly Gly Ile Ile Ala Ile Leu Val Thr Cys Ala Ala Tyr Tyr
 3025 3030 3035 3040
 Phe Met Lys Phe Arg Arg Val Phe Gly Glu Tyr Asn His Val Val Ala
 3045 3050 3055
 Ala Asn Ala Leu Leu Phe Leu Met Ser Phe Thr Ile Leu Cys Leu Val
 3060 3065 3070
 Pro Ala Tyr Ser Phe Leu Pro Gly Val Tyr Ser Val Phe Tyr Leu Tyr
 3075 3080 3085
 Leu Thr Phe Tyr Phe Thr Asn Asp Val Ser Phe Leu Ala His Leu Gln
 3090 3095 3100
 Trp Phe Ala Met Phe Ser Pro Ile Val Pro Phe Trp Ile Thr Ala Ile
 3105 3110 3115 3120

SEQLIST-20480.TXT

Tyr Val Phe Cys Ile Ser Leu Lys His Cys His Trp Phe Phe Asn Asn
 3125 3130 3135
 Tyr Leu Arg Lys Arg Val Met Phe Asn Gly Val Thr Phe Ser Thr Phe
 3140 3145 3150
 Glu Glu Ala Ala Leu Cys Thr Phe Leu Leu Asn Lys Glu Met Tyr Leu
 3155 3160 3165
 Lys Leu Arg Ser Glu Thr Leu Leu Pro Leu Thr Gln Tyr Asn Arg Tyr
 3170 3175 3180
 Leu Ala Leu Tyr Asn Lys Tyr Lys Tyr Phe Ser Gly Ala Leu Asp Thr
 3185 3190 3200
 Thr Ser Tyr Arg Glu Ala Ala Cys Cys His Leu Ala Lys Ala Leu Asn
 3205 3210 3215
 Asp Phe Ser Asn Ser Gly Ala Asp Val Leu Tyr Gln Pro Pro Gln Thr
 3220 3225 3230
 Ser Ile Thr Ser Ala Val Leu Gln Ser Gly Phe Arg Lys Met Ala Phe
 3235 3240 3245
 Pro Ser Gly Lys Val Glu Gly Cys Met Val Gln Val Thr Cys Gly Thr
 3250 3255 3260
 Thr Thr Leu Asn Gly Leu Trp Leu Asp Asp Thr Val Tyr Cys Pro Arg
 3265 3270 3275 3280
 His Val Ile Cys Thr Ala Glu Asp Met Leu Asn Pro Asn Tyr Glu Asp
 3285 3290 3295
 Leu Leu Ile Arg Lys Ser Asn His Ser Phe Leu Val Gln Ala Gly Asn
 3300 3305 3310
 Val Gln Leu Arg Val Ile Gly His Ser Met Gln Asn Cys Leu Leu Arg
 3315 3320 3325
 Leu Lys Val Asp Thr Ser Asn Pro Lys Thr Pro Lys Tyr Lys Phe Val
 3330 3335 3340
 Arg Ile Gln Pro Gly Gln Thr Phe Ser Val Leu Ala Cys Tyr Asn Gly
 3345 3350 3355 3360
 Ser Pro Ser Gly Val Tyr Gln Cys Ala Met Arg Pro Asn His Thr Ile
 3365 3370 3375
 Lys Gly Ser Phe Leu Asn Gly Ser Cys Gly Ser Val Gly Phe Asn Ile
 3380 3385 3390
 Asp Tyr Asp Cys Val Ser Phe Cys Tyr Met His His Met Glu Leu Pro
 3395 3400 3405
 Thr Gly Val His Ala Gly Thr Asp Leu Glu Gly Lys Phe Tyr Gly Pro
 3410 3415 3420
 Phe Val Asp Arg Gln Thr Ala Gln Ala Ala Gly Thr Asp Thr Thr Ile
 3425 3430 3435 3440
 Thr Leu Asn Val Leu Ala Trp Leu Tyr Ala Ala Val Ile Asn Gly Asp
 3445 3450 3455

SEQLIST-20480.TXT

Arg Trp Phe Leu Asn Arg Phe Thr Thr Thr Leu Asn Asp Phe Asn Leu
3460 3465 3470

Val Ala Met Lys Tyr Asn Tyr Glu Pro Leu Thr Gln Asp His Val Asp
3475 3480 3485

Ile Leu Gly Pro Leu Ser Ala Gln Thr Gly Ile Ala Val Leu Asp Met
3490 3495 3500

Cys Ala Ala Leu Lys Glu Leu Leu Gln Asn Gly Met Asn Gly Arg Thr
3505 3510 3515 3520

Ile Leu Gly Ser Thr Ile Leu Glu Asp Glu Phe Thr Pro Phe Asp Val
3525 3530 3535

Val Arg Gln Cys Ser Gly Val Thr Phe Gln Gly Lys Phe Lys Lys Ile
3540 3545 3550

Val Lys Gly Thr His His Trp Met Leu Leu Thr Phe Leu Thr Ser Leu
3555 3560 3565

Leu Ile Leu Val Gln Ser Thr Gln Trp Ser Leu Phe Phe Phe Val Tyr
3570 3575 3580

Glu Asn Ala Phe Leu Pro Phe Thr Leu Gly Ile Met Ala Ile Ala Ala
3585 3590 3595 3600

Cys Ala Met Leu Leu Val Lys His Lys His Ala Phe Leu Cys Leu Phe
3605 3610 3615

Leu Leu Pro Ser Leu Ala Thr Val Ala Tyr Phe Asn Met Val Tyr Met
3620 3625 3630

Pro Ala Ser Trp Val Met Arg Ile Met Thr Trp Leu Glu Leu Ala Asp
3635 3640 3645

Thr Ser Leu Ser Gly Tyr Arg Leu Lys Asp Cys Val Met Tyr Ala Ser
3650 3655 3660

Ala Leu Val Leu Leu Ile Leu Met Thr Ala Arg Thr Val Tyr Asp Asp
3665 3670 3675 3680

Ala Ala Arg Arg Val Trp Thr Leu Met Asn Val Ile Thr Leu Val Tyr
3685 3690 3695

Lys Val Tyr Tyr Gly Asn Ala Leu Asp Gln Ala Ile Ser Met Trp Ala
3700 3705 3710

Leu Val Ile Ser Val Thr Ser Asn Tyr Ser Gly Val Val Thr Thr Ile
3715 3720 3725

Met Phe Leu Ala Arg Ala Ile Val Phe Val Cys Val Glu Tyr Tyr Pro
3730 3735 3740

Leu Leu Phe Ile Thr Gly Asn Thr Leu Gln Cys Ile Met Leu Val Tyr
3745 3750 3755 3760

Cys Phe Leu Gly Tyr Cys Cys Cys Cys Tyr Phe Gly Leu Phe Cys Leu
3765 3770 3775

Leu Asn Arg Tyr Phe Arg Leu Thr Leu Gly Val Tyr Asp Tyr Leu Val
3780 3785 3790

SEQLIST-20480.TXT

Ser Thr Gln Glu Phe Arg Tyr Met Asn Ser Gln Gly Leu Leu Pro Pro
3795 3800 3805

Lys Ser Ser Ile Asp Ala Phe Lys Leu Asn Ile Lys Leu Leu Gly Ile
3810 3815 3820

Gly Gly Lys Pro Cys Ile Lys Val Ala Thr Val Gln Ser Lys Met Ser
3825 3830 3835 3840

Asp Val Lys Cys Thr Ser Val Val Leu Leu Ser Val Leu Gln Gln Leu
3845 3850 3855

Arg Val Glu Ser Ser Ser Lys Leu Trp Ala Gln Cys Val Gln Leu His
3860 3865 3870

Asn Asp Ile Leu Leu Ala Lys Asp Thr Thr Glu Ala Phe Glu Lys Met
3875 3880 3885

Val Ser Leu Leu Ser Val Leu Leu Ser Met Gln Gly Ala Val Asp Ile
3890 3895 3900

Asn Arg Leu Cys Glu Glu Met Leu Asp Asn Arg Ala Thr Leu Gln Ala
3905 3910 3915 3920

Ile Ala Ser Glu Phe Ser Ser Leu Pro Ser Tyr Ala Ala Tyr Ala Thr
3925 3930 3935

Ala Gln Glu Ala Tyr Glu Gln Ala Val Ala Asn Gly Asp Ser Glu Val
3940 3945 3950

Val Leu Lys Lys Leu Lys Lys Ser Leu Asn Val Ala Lys Ser Glu Phe
3955 3960 3965

Asp Arg Asp Ala Ala Met Gln Arg Lys Leu Glu Lys Met Ala Asp Gln
3970 3975 3980

Ala Met Thr Gln Met Tyr Lys Gln Ala Arg Ser Glu Asp Lys Arg Ala
3985 3990 3995 4000

Lys Val Thr Ser Ala Met Gln Thr Met Leu Phe Thr Met Leu Arg Lys
4005 4010 4015

Leu Asp Asn Asp Ala Leu Asn Asn Ile Ile Asn Asn Ala Arg Asp Gly
4020 4025 4030

Cys Val Pro Leu Asn Ile Ile Pro Leu Thr Thr Ala Ala Lys Leu Met
4035 4040 4045

Val Val Val Pro Asp Tyr Gly Thr Tyr Lys Asn Thr Cys Asp Gly Asn
4050 4055 4060

Thr Phe Thr Tyr Ala Ser Ala Leu Trp Glu Ile Gln Gln Val Val Asp
4065 4070 4075 4080

Ala Asp Ser Lys Ile Val Gln Leu Ser Glu Ile Asn Met Asp Asn Ser
4085 4090 4095

Pro Asn Leu Ala Trp Pro Leu Ile Val Thr Ala Leu Arg Ala Asn Ser
4100 4105 4110

Ala Val Lys Leu Gln Asn Asn Glu Leu Ser Pro Val Ala Leu Arg Gln
4115 4120 4125

SEQLIST-20480.TXT

Met Ser Cys Ala Ala Gly Thr Thr Gln Thr Ala Cys Thr Asp Asp Asn
4130 4135 4140

Ala Leu Ala Tyr Tyr Asn Asn Ser Lys Gly Gly Arg Phe Val Leu Ala
4145 4150 4155 4160

Leu Leu Ser Asp His Gln Asp Leu Lys Trp Ala Arg Phe Pro Lys Ser
4165 4170 4175

Asp Gly Thr Gly Thr Ile Tyr Thr Glu Leu Glu Pro Pro Cys Arg Phe
4180 4185 4190

Val Thr Asp Thr Pro Lys Gly Pro Lys Val Lys Tyr Leu Tyr Phe Ile
4195 4200 4205

Lys Gly Leu Asn Asn Leu Asn Arg Gly Met Val Leu Gly Ser Leu Ala
4210 4215 4220

Ala Thr Val Arg Leu Gln Ala Gly Asn Ala Thr Glu Val Pro Ala Asn
4225 4230 4235 4240

Ser Thr Val Leu Ser Phe Cys Ala Phe Ala Val Asp Pro Ala Lys Ala
4245 4250 4255

Tyr Lys Asp Tyr Leu Ala Ser Gly Gly Gln Pro Ile Thr Asn Cys Val
4260 4265 4270

Lys Met Leu Cys Thr His Thr Gly Thr Gly Gln Ala Ile Thr Val Thr
4275 4280 4285

Pro Glu Ala Asn Met Asp Gln Glu Ser Phe Gly Gly Ala Ser Cys Cys
4290 4295 4300

Leu Tyr Cys Arg Cys His Ile Asp His Pro Asn Pro Lys Gly Phe Cys
4305 4310 4315 4320

Asp Leu Lys Gly Lys Tyr Val Gln Ile Pro Thr Thr Cys Ala Asn Asp
4325 4330 4335

Pro Val Gly Phe Thr Leu Arg Asn Thr Val Cys Thr Val Cys Gly Met
4340 4345 4350

Trp Lys Gly Tyr Gly Cys Ser Cys Asp Gln Leu Arg Glu Pro Leu Met
4355 4360 4365

Gln Ser Ala Asp Ala Ser Thr Xaa Xaa Gly Val Ser Ala Ala Arg Leu
4370 4375 4380

Thr Pro Cys Gly Thr Gly Thr Ser Thr Asp Val Val Tyr Arg Ala Phe
4385 4390 4395 4400

Asp Ile Tyr Asn Glu Lys Val Ala Gly Phe Ala Lys Phe Leu Lys Thr
4405 4410 4415

Asn Cys Cys Arg Phe Gln Glu Lys Asp Glu Glu Gly Asn Leu Leu Asp
4420 4425 4430

Ser Tyr Phe Val Val Lys Arg His Thr Met Ser Asn Tyr Gln His Glu
4435 4440 4445

Glu Thr Ile Tyr Asn Leu Val Lys Asp Cys Pro Ala Val Ala Val His
4450 4455 4460

SEQLIST-20480.TXT

Asp Phe Phe Lys Phe Arg Val Asp Gly Asp Met Val Pro His Ile Ser
 4465 4470 4475 4480
 Arg Gln Arg Leu Thr Lys Tyr Thr Met Ala Asp Leu Val Tyr Ala Leu
 4485 4490 4495
 Arg His Phe Asp Glu Gly Asn Cys Asp Thr Leu Lys Glu Ile Leu Val
 4500 4505 4510
 Thr Tyr Asn Cys Cys Asp Asp Asp Tyr Phe Asn Lys Lys Asp Trp Tyr
 4515 4520 4525
 Asp Phe Val Glu Asn Pro Asp Ile Leu Arg Val Tyr Ala Asn Leu Gly
 4530 4535 4540
 Glu Arg Val Arg Gln Ser Leu Leu Lys Thr Val Gln Phe Cys Asp Ala
 4545 4550 4555 4560
 Met Arg Asp Ala Gly Ile Val Gly Val Leu Thr Leu Asp Asn Gln Asp
 4565 4570 4575
 Leu Asn Gly Asn Trp Tyr Asp Phe Gly Asp Phe Val Gln Val Ala Pro
 4580 4585 4590
 Gly Cys Gly Val Pro Ile Val Asp Ser Tyr Tyr Ser Leu Leu Met Pro
 4595 4600 4605
 Ile Leu Thr Leu Thr Arg Ala Leu Ala Ala Glu Ser His Met Asp Ala
 4610 4615 4620
 Asp Leu Ala Lys Pro Leu Ile Lys Trp Asp Leu Leu Lys Tyr Asp Phe
 4625 4630 4635 4640
 Thr Glu Glu Arg Leu Cys Leu Phe Asp Arg Tyr Phe Lys Tyr Trp Asp
 4645 4650 4655
 Gln Thr Tyr His Pro Asn Cys Ile Asn Cys Leu Asp Asp Arg Cys Ile
 4660 4665 4670
 Leu His Cys Ala Asn Phe Asn Val Leu Phe Ser Thr Val Phe Pro Pro
 4675 4680 4685
 Thr Ser Phe Gly Pro Leu Val Arg Lys Ile Phe Val Asp Gly Val Pro
 4690 4695 4700
 Phe Val Val Ser Thr Gly Tyr His Phe Arg Glu Leu Gly Val Val His
 4705 4710 4715 4720
 Asn Gln Asp Val Asn Leu His Ser Ser Arg Leu Ser Phe Lys Glu Leu
 4725 4730 4735
 Leu Val Tyr Ala Ala Asp Pro Ala Met His Ala Ala Ser Gly Asn Leu
 4740 4745 4750
 Leu Leu Asp Lys Arg Thr Thr Cys Phe Ser Val Ala Ala Leu Thr Asn
 4755 4760 4765
 Asn Val Ala Phe Gln Thr Val Lys Pro Gly Asn Phe Asn Lys Asp Phe
 4770 4775 4780
 Tyr Asp Phe Ala Val Ser Lys Gly Phe Phe Lys Glu Gly Ser Ser Val
 4785 4790 4795 4800

SEQLIST-20480.TXT

Glu Leu Lys His Phe Phe Phe Ala Gln Asp Gly Asn Ala Ala Ile Ser
 4805 4810 4815
 Asp Tyr Asp Tyr Tyr Arg Tyr Asn Leu Pro Thr Met Cys Asp Ile Arg
 4820 4825 4830
 Gln Leu Leu Phe Val Val Glu Val Val Asp Lys Tyr Phe Asp Cys Tyr
 4835 4840 4845
 Asp Gly Gly Cys Ile Asn Ala Asn Gln Val Ile Val Asn Asn Leu Asp
 4850 4855 4860
 Lys Ser Ala Gly Phe Pro Phe Asn Lys Trp Gly Lys Ala Arg Leu Tyr
 4865 4870 4875 4880
 Tyr Asp Ser Met Ser Tyr Glu Asp Gln Asp Ala Leu Phe Ala Tyr Thr
 4885 4890 4895
 Lys Arg Asn Val Ile Pro Thr Ile Thr Gln Met Asn Leu Lys Tyr Ala
 4900 4905 4910
 Ile Ser Ala Lys Asn Arg Ala Arg Thr Val Ala Gly Val Ser Ile Cys
 4915 4920 4925
 Ser Thr Met Thr Asn Arg Gln Phe His Gln Lys Leu Leu Lys Ser Ile
 4930 4935 4940
 Ala Ala Thr Arg Gly Ala Thr Val Val Ile Gly Thr Ser Lys Phe Tyr
 4945 4950 4955 4960
 Gly Gly Trp His Asn Met Leu Lys Thr Val Tyr Ser Asp Val Glu Thr
 4965 4970 4975
 Pro His Leu Met Gly Trp Asp Tyr Pro Lys Cys Asp Arg Ala Met Pro
 4980 4985 4990
 Asn Met Leu Arg Ile Met Ala Ser Leu Val Leu Ala Arg Lys His Asn
 4995 5000 5005
 Thr Cys Cys Asn Leu Ser His Arg Phe Tyr Arg Leu Ala Asn Glu Cys
 5010 5015 5020
 Ala Gln Val Leu Ser Glu Met Val Met Cys Gly Gly Ser Leu Tyr Val
 5025 5030 5035 5040
 Lys Pro Gly Gly Thr Ser Ser Gly Asp Ala Thr Thr Ala Tyr Ala Asn
 5045 5050 5055
 Ser Val Phe Asn Ile Cys Gln Ala Val Thr Ala Asn Val Asn Ala Leu
 5060 5065 5070
 Leu Ser Thr Asp Gly Asn Lys Ile Ala Asp Lys Tyr Val Arg Asn Leu
 5075 5080 5085
 Gln His Arg Leu Tyr Glu Cys Leu Tyr Arg Asn Arg Asp Val Asp His
 5090 5095 5100
 Glu Phe Val Asp Glu Phe Tyr Ala Tyr Leu Arg Lys His Phe Ser Met
 5105 5110 5115 5120
 Met Ile Leu Ser Asp Asp Ala Val Val Cys Tyr Asn Ser Asn Tyr Ala
 5125 5130 5135

SEQLIST-20480.TXT

Ala Gln Gly Leu Val Ala Ser Ile Lys Asn Phe Lys Ala Val Leu Tyr
5140 5145 5150

Tyr Gln Asn Asn Val Phe Met Ser Glu Ala Lys Cys Trp Thr Glu Thr
5155 5160 5165

Asp Leu Thr Lys Gly Pro His Glu Phe Cys Ser Gln His Thr Met Leu
5170 5175 5180

Val Lys Gln Gly Asp Asp Tyr Val Tyr Leu Pro Tyr Pro Asp Pro Ser
5185 5190 5195 5200

Arg Ile Leu Gly Ala Gly Cys Phe Val Asp Asp Ile Val Lys Thr Asp
5205 5210 5215

Gly Thr Leu Met Ile Glu Arg Phe Val Ser Leu Ala Ile Asp Ala Tyr
5220 5225 5230

Pro Leu Thr Lys His Pro Asn Gln Glu Tyr Ala Asp Val Phe His Leu
5235 5240 5245

Tyr Leu Gln Tyr Ile Arg Lys Leu His Asp Glu Leu Thr Gly His Met
5250 5255 5260

Leu Asp Met Tyr Ser Val Met Leu Thr Asn Asp Asn Thr Ser Arg Tyr
5265 5270 5275 5280

Trp Glu Pro Glu Phe Tyr Glu Ala Met Tyr Thr Pro His Thr Val Leu
5285 5290 5295

Gln Ala Val Gly Ala Cys Val Leu Cys Asn Ser Gln Thr Ser Leu Arg
5300 5305 5310

Cys Gly Ala Cys Ile Arg Arg Pro Phe Leu Cys Cys Lys Cys Cys Tyr
5315 5320 5325

Asp His Val Ile Ser Thr Ser His Lys Leu Val Leu Ser Val Asn Pro
5330 5335 5340

Tyr Val Cys Asn Ala Pro Gly Cys Asp Val Thr Asp Val Thr Gln Leu
5345 5350 5355 5360

Tyr Leu Gly Gly Met Ser Tyr Tyr Cys Lys Ser His Lys Pro Pro Ile
5365 5370 5375

Ser Phe Pro Leu Cys Ala Asn Gly Gln Val Phe Gly Leu Tyr Lys Asn
5380 5385 5390

Thr Cys Val Gly Ser Asp Asn Val Thr Asp Phe Asn Ala Ile Ala Thr
5395 5400 5405

Cys Asp Trp Thr Asn Ala Gly Asp Tyr Ile Leu Ala Asn Thr Cys Thr
5410 5415 5420

Glu Arg Leu Lys Leu Phe Ala Ala Glu Thr Leu Lys Ala Thr Glu Glu
5425 5430 5435 5440

Thr Phe Lys Leu Ser Tyr Gly Ile Ala Thr Val Arg Glu Val Leu Ser
5445 5450 5455

Asp Arg Glu Leu His Leu Ser Trp Glu Val Gly Lys Pro Arg Pro Pro
5460 5465 5470

SEQLIST-20480.TXT

Leu Asn Arg Asn Tyr Val Phe Thr Gly Tyr Arg Val Thr Lys Asn Ser
 5475 5480 5485
 Lys Val Gln Ile Gly Glu Tyr Thr Phe Glu Lys Gly Asp Tyr Gly Asp
 5490 5495 5500
 Ala Val Val Tyr Arg Gly Thr Thr Thr Tyr Lys Leu Asn Val Gly Asp
 5505 5510 5515 5520
 Tyr Phe Val Leu Thr Ser His Thr Val Met Pro Leu Ser Ala Pro Thr
 5525 5530 5535
 Leu Val Pro Gln Glu His Tyr Val Arg Ile Thr Gly Leu Tyr Pro Thr
 5540 5545 5550
 Leu Asn Ile Ser Asp Glu Phe Ser Ser Asn Val Ala Asn Tyr Gln Lys
 5555 5560 5565
 Val Gly Met Gln Lys Tyr Ser Thr Leu Gln Gly Pro Pro Gly Thr Gly
 5570 5575 5580
 Lys Ser His Phe Ala Ile Gly Leu Ala Leu Tyr Tyr Pro Ser Ala Arg
 5585 5590 5595 5600
 Ile Val Tyr Thr Ala Cys Ser His Ala Ala Val Asp Ala Leu Cys Glu
 5605 5610 5615
 Lys Ala Leu Lys Tyr Leu Pro Ile Asp Lys Cys Ser Arg Ile Ile Pro
 5620 5625 5630
 Ala Arg Ala Arg Val Glu Cys Phe Asp Lys Phe Lys Val Asn Ser Thr
 5635 5640 5645
 Leu Glu Gln Tyr Val Phe Cys Thr Val Asn Ala Leu Pro Glu Thr Thr
 5650 5655 5660
 Ala Asp Ile Val Val Phe Asp Glu Ile Ser Met Ala Thr Asn Tyr Asp
 5665 5670 5675 5680
 Leu Ser Val Val Asn Ala Arg Leu Arg Ala Lys His Tyr Val Tyr Ile
 5685 5690 5695
 Gly Asp Pro Ala Gln Leu Pro Ala Pro Arg Thr Leu Leu Thr Lys Gly
 5700 5705 5710
 Thr Leu Glu Pro Glu Tyr Phe Asn Ser Val Cys Arg Leu Met Lys Thr
 5715 5720 5725
 Ile Gly Pro Asp Met Phe Leu Gly Thr Cys Arg Arg Cys Pro Ala Glu
 5730 5735 5740
 Ile Val Asp Thr Val Ser Ala Leu Val Tyr Asp Asn Lys Leu Lys Ala
 5745 5750 5755 5760
 His Lys Asp Lys Ser Ala Gln Cys Phe Lys Met Phe Tyr Lys Gly Val
 5765 5770 5775
 Ile Thr His Asp Val Ser Ser Ala Ile Asn Arg Pro Gln Ile Gly Val
 5780 5785 5790
 Val Arg Glu Phe Leu Thr Arg Asn Pro Ala Trp Arg Lys Ala Val Phe
 5795 5800 5805

SEQLIST-20480.TXT

Ile Ser Pro Tyr Asn Ser Gln Asn Ala Val Ala Ser Lys Ile Leu Gly
5810 5815 5820

Leu Pro Thr Gln Thr Val Asp Ser Ser Gln Gly Ser Glu Tyr Asp Tyr
5825 5830 5835 5840

Val Ile Phe Thr Gln Thr Thr Glu Thr Ala His Ser Cys Asn Val Asn
5845 5850 5855

Arg Phe Asn Val Ala Ile Thr Arg Ala Lys Ile Gly Ile Leu Cys Ile
5860 5865 5870

Met Ser Asp Arg Asp Leu Tyr Asp Lys Leu Gln Phe Thr Ser Leu Glu
5875 5880 5885

Ile Pro Arg Arg Asn Val Ala Thr Leu Gln Ala Glu Asn Val Thr Gly
5890 5895 5900

Leu Phe Lys Asp Cys Ser Lys Ile Ile Thr Gly Leu His Pro Thr Gln
5905 5910 5915 5920

Ala Pro Thr His Leu Ser Val Asp Ile Lys Phe Lys Thr Glu Gly Leu
5925 5930 5935

Cys Val Asp Ile Pro Gly Ile Pro Lys Asp Met Thr Tyr Arg Arg Leu
5940 5945 5950

Ile Ser Met Met Gly Phe Lys Met Asn Tyr Gln Val Asn Gly Tyr Pro
5955 5960 5965

Asn Met Phe Ile Thr Arg Glu Glu Ala Ile Arg His Val Arg Ala Trp
5970 5975 5980

Ile Gly Phe Asp Val Glu Gly Cys His Ala Thr Arg Asp Ala Val Gly
5985 5990 5995 6000

Thr Asn Leu Pro Leu Gln Leu Gly Phe Ser Thr Gly Val Asn Leu Val
6005 6010 6015

Ala Val Pro Thr Gly Tyr Val Asp Thr Glu Asn Asn Thr Glu Phe Thr
6020 6025 6030

Arg Val Asn Ala Lys Pro Pro Pro Gly Asp Gln Phe Lys His Leu Ile
6035 6040 6045

Pro Leu Met Tyr Lys Gly Leu Pro Trp Asn Val Val Arg Ile Lys Ile
6050 6055 6060

Val Gln Met Leu Ser Asp Thr Leu Lys Gly Leu Ser Asp Arg Val Val
6065 6070 6075 6080

Phe Val Leu Trp Ala His Gly Phe Glu Leu Thr Ser Met Lys Tyr Phe
6085 6090 6095

Val Lys Ile Gly Pro Glu Arg Thr Cys Cys Leu Cys Asp Lys Arg Ala
6100 6105 6110

Thr Cys Phe Ser Thr Ser Ser Asp Thr Tyr Ala Cys Trp Asn His Ser
6115 6120 6125

Val Gly Phe Asp Tyr Val Tyr Asn Pro Phe Met Ile Asp Val Gln Gln
6130 6135 6140

SEQLIST-20480.TXT

Trp Gly Phe Thr Gly Asn Leu Gln Ser Asn His Asp Gln His Cys Gln
 6145 6150 6155 6160
 Val His Gly Asn Ala His Val Ala Ser Cys Asp Ala Ile Met Thr Arg
 6165 6170 6175
 Cys Leu Ala Val His Glu Cys Phe Val Lys Arg Val Asp Trp Ser Val
 6180 6185 6190
 Glu Tyr Pro Ile Ile Gly Asp Glu Leu Arg Val Asn Ser Ala Cys Arg
 6195 6200 6205
 Lys Val Gln His Met Val Val Lys Ser Ala Leu Leu Ala Asp Lys Phe
 6210 6215 6220
 Pro Val Leu His Asp Ile Gly Asn Pro Lys Ala Ile Lys Cys Val Pro
 6225 6230 6235 6240
 Gln Ala Glu Val Glu Trp Lys Phe Tyr Asp Ala Gln Pro Cys Ser Asp
 6245 6250 6255
 Lys Ala Tyr Lys Ile Glu Glu Leu Phe Tyr Ser Tyr Ala Thr His His
 6260 6265 6270
 Asp Lys Phe Thr Asp Gly Val Cys Leu Phe Trp Asn Cys Asn Val Asp
 6275 6280 6285
 Arg Tyr Pro Ala Asn Ala Ile Val Cys Arg Phe Asp Thr Arg Val Leu
 6290 6295 6300
 Ser Asn Leu Asn Leu Pro Gly Cys Asp Gly Gly Ser Leu Tyr Val Asn
 6305 6310 6315 6320
 Lys His Ala Phe His Thr Pro Ala Phe Asp Lys Ser Ala Phe Thr Asn
 6325 6330 6335
 Leu Lys Gln Leu Pro Phe Phe Tyr Tyr Ser Asp Ser Pro Cys Glu Ser
 6340 6345 6350
 His Gly Lys Gln Val Val Ser Asp Ile Asp Tyr Val Pro Leu Lys Ser
 6355 6360 6365
 Ala Thr Cys Ile Thr Arg Cys Asn Leu Gly Gly Ala Val Cys Arg His
 6370 6375 6380
 His Ala Asn Glu Tyr Arg Gln Tyr Leu Asp Ala Tyr Asn Met Met Ile
 6385 6390 6395 6400
 Ser Ala Gly Phe Ser Leu Trp Ile Tyr Lys Gln Phe Asp Thr Tyr Asn
 6405 6410 6415
 Leu Trp Asn Thr Phe Thr Arg Leu Gln Ser Leu Glu Asn Val Ala Tyr
 6420 6425 6430
 Asn Val Val Asn Lys Gly His Phe Asp Gly His Ala Gly Glu Ala Pro
 6435 6440 6445
 Val Ser Ile Ile Asn Asn Ala Val Tyr Thr Lys Val Asp Gly Ile Asp
 6450 6455 6460
 Val Glu Ile Phe Glu Asn Lys Thr Thr Leu Pro Val Asn Val Ala Phe
 6465 6470 6475 6480

SEQLIST-20480.TXT

Glu Leu Trp Ala Lys Arg Asn Ile Lys Pro Val Pro Glu Ile Lys Ile
6485 6490 6495

Leu Asn Asn Leu Gly Val Asp Ile Ala Ala Asn Thr Val Ile Trp Asp
6500 6505 6510

Tyr Lys Arg Glu Ala Pro Ala His Val Ser Thr Ile Gly Val Cys Thr
6515 6520 6525

Met Thr Asp Ile Ala Lys Lys Pro Thr Glu Ser Ala Cys Ser Ser Leu
6530 6535 6540

Thr Val Leu Phe Asp Gly Arg Val Glu Gly Gln Val Asp Leu Phe Arg
6545 6550 6555 6560

Asn Ala Arg Asn Gly Val Leu Ile Thr Glu Gly Ser Val Lys Gly Leu
6565 6570 6575

Thr Pro Ser Lys Gly Pro Ala Gln Ala Ser Val Asn Gly Val Thr Leu
6580 6585 6590

Ile Gly Glu Ser Val Lys Thr Gln Phe Asn Tyr Phe Lys Lys Val Asp
6595 6600 6605

Gly Ile Ile Gln Gln Leu Pro Glu Thr Tyr Phe Thr Gln Ser Arg Asp
6610 6615 6620

Leu Glu Asp Phe Lys Pro Arg Ser Gln Met Glu Thr Asp Phe Leu Glu
6625 6630 6635 6640

Leu Ala Met Asp Glu Phe Ile Gln Arg Tyr Lys Leu Glu Gly Tyr Ala
6645 6650 6655

Phe Glu His Ile Val Tyr Gly Asp Phe Ser His Gly Gln Leu Gly Gly
6660 6665 6670

Leu His Leu Met Ile Gly Leu Ala Lys Arg Ser Gln Asp Ser Pro Leu
6675 6680 6685

Lys Leu Glu Asp Phe Ile Pro Met Asp Ser Thr Val Lys Asn Tyr Phe
6690 6695 6700

Ile Thr Asp Ala Gln Thr Gly Ser Ser Lys Cys Val Cys Ser Val Ile
6705 6710 6715 6720

Asp Leu Leu Leu Asp Asp Phe Val Glu Ile Ile Lys Ser Gln Asp Leu
6725 6730 6735

Ser Val Ile Ser Lys Val Val Lys Val Thr Ile Asp Tyr Ala Glu Ile
6740 6745 6750

Ser Phe Met Leu Trp Cys Lys Asp Gly His Val Glu Thr Phe Tyr Pro
6755 6760 6765

Lys Leu Gln Ala Ser Arg Ala Trp Gln Pro Gly Val Ala Met Pro Asn
6770 6775 6780

Leu Tyr Lys Met Gln Arg Met Leu Leu Glu Lys Cys Asp Leu Gln Asn
6785 6790 6795 6800

Tyr Gly Glu Asn Ala Val Ile Pro Lys Gly Ile Met Met Asn Val Ala
6805 6810 6815

SEQLIST-20480.TXT

Lys Tyr Thr Gln Leu Cys Gln Tyr Leu Asn Thr Leu Thr Leu Ala Val
6820 6825 6830
Pro Tyr Asn Met Arg Val Ile His Phe Gly Ala Gly Ser Asp Lys Gly
6835 6840 6845
Val Ala Pro Gly Thr Ala Val Leu Arg Gln Trp Leu Pro Thr Gly Thr
6850 6855 6860
Leu Leu Val Asp Ser Asp Leu Asn Asp Phe Val Ser Asp Ala Tyr Ser
6865 6870 6875 6880
Thr Leu Ile Gly Asp Cys Ala Thr Val His Thr Ala Asn Lys Trp Asp
6885 6890 6895
Leu Ile Ile Ser Asp Met Tyr Asp Pro Arg Thr Lys His Val Thr Lys
6900 6905 6910
Glu Asn Asp Ser Lys Glu Gly Phe Phe Thr Tyr Leu Cys Gly Phe Ile
6915 6920 6925
Lys Gln Lys Leu Ala Leu Gly Gly Ser Ile Ala Val Lys Ile Thr Glu
6930 6935 6940
His Ser Trp Asn Ala Asp Leu Tyr Lys Leu Met Gly His Phe Ser Trp
6945 6950 6955 6960
Trp Thr Ala Phe Val Thr Asn Val Asn Ala Ser Ser Ser Glu Ala Phe
6965 6970 6975
Leu Ile Gly Ala Asn Tyr Leu Gly Lys Pro Lys Glu Gln Ile Asp Gly
6980 6985 6990
Tyr Thr Met His Ala Asn Tyr Ile Phe Trp Arg Asn Thr Asn Pro Ile
6995 7000 7005
Gln Leu Ser Ser Tyr Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys
7010 7015 7020
Leu Arg Gly Thr Ala Val Met Ser Leu Lys Glu Asn Gln Ile Asn Asp
7025 7030 7035 7040
Met Ile Tyr Ser Leu Leu Glu Lys Gly Arg Leu Ile Ile Arg Glu Asn
7045 7050 7055
Asn Arg Val Val Val Ser Ser Asp Ile Leu Val Asn Asn
7060 7065

<210> 7237
<211> 7070
<212> PRT
<213> SARS coronavirus

<220>
<221> misc_feature
<222> 4376...4378
<223> Xaa is any amino acid

<400> 7237
Met Glu Ser Leu Val Leu Gly Val Asn Glu Lys Thr His Val Gln Leu
1 5 10 15